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THE COLD CANVASS

By B. T. Umor

The Boss Himself

Exhibits for the First All-Industry Exhibition, which is going so strong this week in Chicago, were not a case of "send down Joe and the blue backgrounds."

In every case, they were carefully thought out, dramatically presented, and staged with a view toward educating those who saw them.

Sunday morning in the exhibition hall, one could see presidents and owners of companies, chief engineers, and sales managers, themselves at work with hammer and nails, opening up packing cases, setting up the exhibits.

And the results were apparent to every visitor.

* * *

International Focus

Delegations of buyers came to the exposition from Texas, California, the South, the Northwest, New England (a special train), and from Canada, which was represented by almost a dozen men. Buyers were even present from Denmark and Sweden.

And good old Frank Hansen of Sydney, Australia, who is rapidly becoming one of the most popular refrigeration men in the world, sent the following cablegram to Publisher F. M. Cockrell of the NEWS:

"Please convey best wishes all concerned for tremendously successful exhibition stop kindest personal regards yourself and the other good fellows whom I hope to meet again in 1940. Frank Hansen."

(Concluded on Page 18, Column 3)

Nema Conference Set For Week of Feb. 6

NEW YORK CITY—Mid-winter conference of National Electrical Manufacturers Association will be held during the week of Feb. 6 at the Waldorf-Astoria hotel.

Approximately 130 division, section, group, and committee meetings, all of which will be closed sessions, will be held during the conference. Annual banquet of the association is scheduled for 7:30 Thursday evening, Feb. 9, on the Starlight Roof.

New Control Is Westinghouse Prime Feature

14 Models Included in 1939 Line; Technical Changes Are Made

MANSFIELD, Ohio—"True-Temp" control, designed to maintain a constant temperature inside the refrigerator despite variations in the outside temperature, tops features of the line of 14 units introduced for 1939 by Westinghouse Electric & Mfg. Co.

Models range in size from a 3.33-cu. ft. unit capable of freezing 44 ice cubes to a 19.2-cu. ft. refrigerator with a capacity of 236 ice cubes.

A midget weather-maker, the "True-Temp" consists of a drop of methyl chloride gas contained in a 5-inch metal tube. Placed outside the evaporator of the refrigerator's food

(Concluded on Page 8, Column 1)

Jones Heads Philco Refrigerator Co.

INDIANAPOLIS—W. Paul Jones has been elected president of Philco Refrigerator Co., a Delaware corporation, which has been established here as a subsidiary of Philadelphia Storage Battery Co. to manufacture Conservador electric refrigerators, rights to which were recently obtained from Fairbanks, Morse & Co.

The Fairbanks-Morse plant here has been leased by Philadelphia

(Concluded on Page 4, Column 3)

Distributors Preview '39 Norge Products

DETROIT—Norge's 1939 line of household electric refrigerators, electric and gas ranges, and home laundry equipment was previewed by more than 100 distributors and their key men at a three-day sales convention here last week.

New refrigerators, which will be announced publicly later, are featured

(Concluded on Page 15, Column 5)

All-Industry Exhibition Draws 1,167 on Opening Day; Displays Educational; Poole, Wood, Cockrell Address Banquet

By Phil B. Redeker

CHICAGO, Jan. 16—The first All-Industry Refrigeration & Air Conditioning Exhibition opened with a bang here today, with 1,167 registrations having been recorded by 4 p.m. of persons from all divisions of the industry who made the long tour through the exhibit hall of the Stevens hotel to view the exhibits which jampacked all but the remote corners of the hall.

A great many of the first-day visitors made audible comment about the apparent care which had been taken to make the various exhibits interesting and pleasing to the eye. Many of the exhibits had moving displays showing the equipment actually in operation, while others used picture treatment or special lighting and decorative effects.

Many of the exhibitors had called in their field sales force from all parts of the country to man the booths and explain new products to those attending the show.

First of the many meetings which are to be held in conjunction with the show were held this afternoon, namely, the opening meeting of the annual convention of the National Refrigeration Supply Jobbers Association, and the meeting held by the

(Concluded on Page 2, Column 1)

Boulware Resigns As Carrier General Mgr.

SYRACUSE, N. Y.—Revision of the management setup of Carrier Corp. following the resignation of L. R. Boulware, vice president and general manager of the company since 1936, has been announced by J. I. Lyle, president.

Carl A. Ostling, formerly in charge of industrial engineering of the Pontiac division of General Motors, has been appointed vice president in charge of production, and new duties have been assigned to vice presidents Edward T. Murphy and James A. Bentley, Mr. Lyle said.

In announcing his resignation, Mr. Boulware made no statement of his future plans. He continues as a member of the board of directors.

(Concluded on Page 15, Column 3)

By George F. Taubeneck

CHICAGO—Poetry, politics, and progress; the American flag, Prime Minister Chamberlain, and Henry Burritt's pants all came into the proceedings when more than 500 guests at the First All-Industry Refrigeration and Air Conditioning Banquet turned their attention from sadly indifferent turkey to arrestingly on-their-toes speakers Monday night.

Prime Minister Chamberlain entered the picture via the observations on national and international politics —and the relationship of refrigeration to the world scene—made by Gardner Poole, vice president of Frosted Foods, Inc., president of the

(Concluded on Page 4, Column 1)

Evaporator Sealed On '39 Gale Units

GALESBURG, Ill.—Deluxe models of the 1939 line of household electric refrigerators just announced by Gale Products, new refrigeration division of Outboard, Marine & Mfg. Co., are equipped with a patented sealed evaporator which has a glass door, interior lighting, and is said to maintain proper cabinet temperatures regardless of the frost accumulation on coils.

Complete Gale line consists of two series of 5, 6, and 7-cu. ft. models, new in styling and in design and convenience features.

Developed by Gale engineers, the

(Concluded on Page 8, Column 5)

Crosley Confident of 1939 Sales Gains

CINCINNATI—The 1939 Crosley line of refrigerators, radios, ranges, washers, and other products was presented to nearly 200 of the company's distributors from various parts of the United States and Canada at a two-day convention at the Netherland Plaza hotel here recently.

Heading the list of new products

(Concluded on Page 15, Column 4)

New Styling Is Keynote of G-E Line For 1939

New Meat Compartment & Defrosting Indicator Added To 13 Models

CLEVELAND—New styling, a new meat storage compartment, and a "tel-a-frost" automatic defrosting indicator characterize the 1939 line of household electric refrigerators introduced by General Electric's specialty appliance sales division.

Thirteen models in three separate series are in the line, ranging in storage capacity from 3 to 16 cu. ft.

The porcelain exterior "PB" group has models in 5, 6, 8, 12, and 16-cu. ft. sizes; the deluxe "B" line, with exterior of Glyptal enamel, is in sizes of 5, 6, and 8 cu. ft.; the standard "JB" series in 3, 4, 5, and 6-cu. ft. sizes. There is also a special apartment house model of 4-cu. ft. capacity, built to fit beneath the drainboard in a crowded kitchen.

Three largest models in the "JB"

(Concluded on Page 20, Column 2)

Rowley To Get Anderson Medal At ASHVE Session

PITTSBURGH—Presentation of the F. Paul Anderson medal will be made to Prof. Frank B. Rowley, director of the engineering experiment station, University of Minnesota, during the forty-fifth annual meeting of the American Society of Heating and Ventilating Engineers at the William Penn hotel here, Jan. 23-26.

The first business session Monday

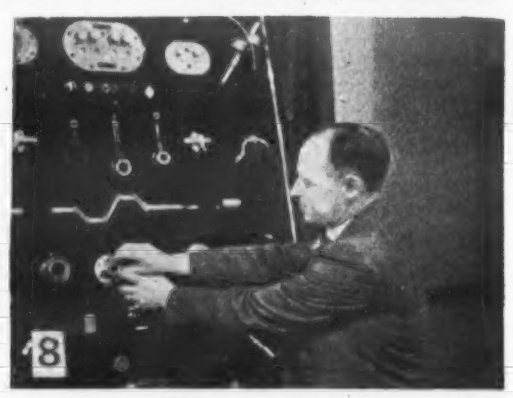
(Concluded on Page 15, Column 1)

Refrigerator Price Control Started By 2 N. Y. Firms

NEW YORK CITY—Marking the entrance of legalized price fixing into the local refrigeration merchandising picture, both Rex Cole, Inc., General Electric distributor, and Times Appliance Co., which distributes the Westinghouse line, are now offering their

(Concluded on Page 20, Column 1)

Refrigeration Supply Jobbers Get Personal Attention At First All-Industry Exhibition



(1) F. M. Cockrell, publisher of the News, shows the whooping big Jan. 11 issue to Herman Goldberg, Chicago jobber. (2) Charles Johnson of Virginia Smelting and Boyd Evans, jobber from Memphis, Tenn. (3) Joseph Hunyadi, jobber from McKees Rocks, Pa., with W. G. von Meyer of Copeland. (4) Two southern jobbers who arrived early Sunday morning: Ed Barnes of Buford Bros., Nashville, Tenn., and W. H. Parker of Hasco, Inc., Greensboro, N. C. (5) Chairman Mel Knight is buttonholed by two visitors who want to know where Booth 111 is. (6) Frank Gleason demonstrates the Copeland souvenir, a tiny metal six-year calendar, to Jobber Irving Alter. (7) "Thar she blows!" Jim Strachan of Kerotest, F. J. Hood of Ansul, and Alec Dawson of Resco, London, Ontario, point the way to profits in 1939. (8) B. G. Hyatt, Copeland service manager, places the last milled part on his exhibit board.

Jobbers Discuss Methods of Improving Their Business At Chicago Meeting

(Concluded from Page 1, Column 3)

Midwest sections of the American Society of Refrigerating Engineers to greet Dr. Gardner Poole, national president of the society.

Opening session of the National Refrigeration Supply Jobbers Association was highlighted by two very direct and forceful addresses on the jobber's place in the industry and the status of the jobbers association, the talks being given by Henry W. Merkel of the Merkel Bros. Co., Cincinnati, president of the association, and A. H. Holcombe, Victor Sales Co., Philadelphia, who sounded the keynote of the convention.

MERKEL CAUTIONS JOBBERS

Mr. Merkel declared that 85% of those who had been members of the association at the time of last year's convention were still in the association today, and that the 15% that had been removed from the membership list represented comparatively few firms, the removals being chiefly occasioned by mergers or failure of the business.

He did caution, however, against allowing certain firms to become members who merely used the privilege of membership to secure certain lines which they desired, and then resigned from the association.

Enough new members had been secured during the year, said Mr. Merkel, to slightly more than offset those who had dropped from the organization.

PROBLEMS IRONED OUT

The graduated scale of membership dues instituted last year was apparently satisfactory and will probably be continued, Mr. Merkel intimated.

One of the most important activities of the association during the past year, the president declared, was in the work done by the manufacturers' relations committee. When this committee hears of some problem which the jobbers seem to be involved in with manufacturers of a certain type of product, it endeavors to meet with executives of firms who are leading manufacturers of the particular type of product, and to iron out the difficulties. Such efforts proved quite successful during the past year, Mr. Merkel reported.

Questionnaires sent to members indicated that the following are practical problems of most concern to jobbers, Mr. Merkel revealed:

1. Cash discounts.
2. The 5% U. S. government tax.
3. Freight allowances.

QUESTION OF DISCOUNT

Because of the large number of small-amount purchases made by customers of the jobber and the wide variety of items purchased and the frequency of purchase it is almost impossible to give discounts for payment on a 10-day or 30-day basis, Mr. Merkel pointed out. One practice has been to give a discount for payment on a certain date after the end of the month for all invoices recorded for the customer in that month, but the matter needs further study and consideration, Mr. Merkel averred.

The matter of the federal 5% tax and freight allowances (where items are shipped f.o.b. factory) is chiefly one of making an effort to have all resale price sheets adjusted so that the quoted price will be an exact price including both the tax and freight allowance, with proper notation being made that the quoted price includes such factors.

MINIMUM ORDER

Another problem demanding attention is the question of a minimum invoice—a minimum order which a customer can place. So much of the jobber's merchandise is in small-amount "penny" items that continued sales of such items, usually done at a loss when all handling charges are figured in, cut deeply into the jobber's profit, Mr. Merkel explained.

A minimum charge would cut these handling and writing-up losses and might influence customers to buy in much larger quantities, it was pointed out.

Study of the business and actual experience of those in the game has shown that the refrigeration supply jobbing business needs the concentrated attention of those who are engaged in the business, and that it does not mix well with any other endeavor. Mr. Merkel made the latter point with some emphasis.

Mr. Holcombe traced the development of the association, from the time of its organization meeting in 1935 in the offices of AIR CONDITIONING & REFRIGERATION NEWS, and offered a statement of the aims of the association as they had made themselves apparent in the various meetings.

ORIGINAL DEFINITION

Some of the original concepts of the society were to make a refrigeration jobber a jobber only, and to get him a maximum discount regardless of quantity.

A definition of a jobber was made at that first meeting, which has gradually been redefined at later conventions, Mr. Holcombe explained. The number of items which a parts wholesaler should carry if he is to be regarded as a thorough-going jobber and a candidate for membership in the society has been expanded as the industry has grown, and it was definitely asserted that the jobber should not do retail service work or sell at retail.

THE SOCIETY'S AIMS

At last year's convention the aims of the society, Mr. Holcombe said, were outlined briefly as follows:

1. To provide a better and up-to-date definition of the jobber and the jobber's function.
2. To gain a greater acceptance by the manufacturer.
3. To cooperate more fully with manufacturers.
4. To check up and visit new jobbers.
5. To issue regular bulletins, exchanging information.
6. To organize local and regional associations.
7. To obtain more publicity about the activities of the society.

WAYS TO IMPROVE

What the jobbers can do individually to improve their business, Mr. Holcombe described under three headings, as follows:

1. Stores. The store reflects the owner's personality. Keep it clean. Use more displays. Give serious thought about the number of competing lines that can be stocked and sold successfully.

2. Office. Attempt to get a rounded-out personnel—one that will handle sales, engineering, record-keeping, accounting, and management problems all successfully. Don't employ extra help or boost overhead in busy times, when the same results might be accomplished by a little extra work.

3. Customer relations. Don't compete with customers, but use common sense in applying this rule. Don't worry about legitimate competition. It's bound to come, especially to jobbers who have been operating in large territories. Beware of "buying lying," misrepresentations of price quotations by customers attempting to drive the price down.

J. D. Colyer, president of the Refrigeration Supplies and Parts Manufacturers Association, also spoke briefly at the opening session, urging the jobbers to always bring their problems to the attention of the manufacturers.

R. M. McClure, association secretary, read a telegram from Frank E. Hansen, general manager of F. C. Lovelock Pty., Ltd., Sydney, Australia, conveying greetings to the jobbers from those "down under."

Claude A. Brunton, newly elected president of the Refrigeration Service Engineers Society, invited the jobbers to cooperate with the service men in the general development of the industry.

Mr. Brunton declared that it is up to the refrigeration industry to whip the present depression, and expressed his belief that this could be accomplished through a united effort. He pledged the support of the R.S.E.S. to make 1939 the most successful year in the history of refrigeration.

All the Glamour Girls Aren't In Hollywood

These four young and stylish members of the All-Industry Exhibition ladies committee were around constantly, brightening up the exhibits and inspiring the exhibitors to keep their neckties straightened. Left to right: Mrs. Mel Knight (chairman of the committee), Mrs. Hal Clay, Mrs. Walter Honeychurch, and Mrs. Irving Alter.

What Phil Redeker Saw At All-Industry Show

The following is a view of the exhibition such as might be obtained by a visitor hurrying through during the first day of the show. More information on the products shown will be provided in a later issue:

Modern Equipment Corp. . . . a host of red-base condensing units and a background of fine enlarged photographs showing the "Par" plant in action; W. A. Hammond Drierite Co. . . . a miniature chemical laboratory, demonstrating the drying of organic liquids in the liquid and vapor phases.

Pacific Lumber Co. . . . a section of a California Redwood tree (cheers from "Sandy" Pratt) and the Palco insulation made from the tree; Refrigerating Specialties Co. . . . some of the biggest valves you ever saw; Kold-Hold Mfg. Co. . . . hold-over cold plates all over the place, even forming the table on which the company literature was set.

GLASS JARS OF FITTINGS

Weatherhead Co. . . . hundreds of fittings shown in glass jars looking much like grandma's preserves, against a cartoon background of the well-known Weatherhead "no slip" "no strip" "no squeals" boys; Fairbanks-Morse . . . air conditioners, and big condensing units, plus pictures of actual installations.

Brunner Mfg. Co. . . . big condensing units, little condensing units, condensing units in all sizes, some with gay streamers attached showing that Brunner air-cooled units are really air cooled; Jewett Refrigerator Co. . . . a new kind of household electric refrigerator, and the very novel "Beerador" refrigerator for bottled beverages.

Gale Products . . . a new line of commercial machines up to 1 hp., and a space cooler; Allen-Bradley Co. . . . controls operating before your very eyes, an unusual display showing how a control for an air-compressor application is not affected by vibration, and a convincing demonstration of accurate temperature control.

Sherer-Gillett Co. . . . a full-height display case, and why not?; Imperial Brass Mfg. Co. . . . the many Imperial products mounted on walnut veneer display boards, a display idea that is both beautiful and dignified, a big lighted cutaway picture of a sylphon valve, a unit in operation all fitted up with Imperial fittings, dehydrator, and charging set.

CONTROLS IN OPERATION

Minneapolis-Honeywell . . . as usual, some M-H controls actually in operation, this time demonstrating the much-discussed Polartron system; American Brass Co. . . . a very effective display of refrigerant lines on a duplexed installation in which a vibration eliminator is used.

American Injector Co. . . . the Vacuumator pulling a vacuum of 28¼ inches and very convincingly, also oil separators; Zenith Carburetor Co. . . . refrigerant filters in all sizes, for all applications.

Wagner Electric Co. . . . impressive air photo of the huge Wagner plant, and some working demonstrations, one using a coffee percolator and a fan to illustrate the glass insulated stator (s'help me).

Spoehrer-Lange Co. . . . a new solenoid valve for commercial applications, slowly turning enlarged versions of the sealed cans for Sporlan valves, a slick merchandising idea; Mills Novelty Co. . . . compressors, ice cream freezers, self-contained drink venders, and more compressors.

McIntire Connector Co. . . . MIC, a new drying agent (full description later, we hope); Larkin Coil Co. . . . coils, coils, and the Larkin water-cooling unit; Virginia Smelting Co. . . . a big refrigerant cylinder looking actually pretty in an attractively lighted latticed surrounding.

Tecumseh Products . . . compressors, the new Tecumseh hermetic being cutaway to show its "guts"; Peerless of America . . . Peerless flash coolers, Peerless gun coolers, Peerless coils, and plenty of orange, the Peerless school color.

McCord Radiator Co. . . . coils of all kinds, unit coolers; Pelco . . . beverage coolers in new design and color scheme; Anemostat Corp. . . . the Anemostat air-distribution system explained by a lighted picture.

VALVES, VALVES, AND VALVES

Automatic Products Co. . . . expansion valves, solenoid valves, refrigeration valves, in a display epitomizing the Automatic Products policy of beauty and neatness in design; Kerotest Mfg. Co. . . . a picture theater showing the improvements in the new Kerotest valve line.

Jas. P. Marsh Corp. . . . instruments, thermometers, gauges, recorders for all kinds of applications; Riley Engineering Co. . . . colored "action" drawing depicting how an oil separator works; Superior Valve & Fittings Co. . . . a manifolded refrigerant line hookup with a heat exchanger, showing where the various line valves are placed, and gauges showing refrigerant pressures at the various points.

Fedders Mfg. Co. . . . one of the most complete displays at the show, exhibiting all of the various Fedders products, and spotlighting the new 381 expansion valve; Mueller Brass Co. . . . lighted cutaway picture showing details of the new triple-seal diaphragm-type line valve, and other exhibits of the entire Mueller line; R. & H. Chemicals Dept., E. I. du Pont de Nemours . . . a photographer's booth in an igloo (all right, I vas dere, Sharlie).

Henry Valve Co. . . . "The Hear 'Em Hiss" Henry dryer staring you right in the face (but Charlie Gary missed a bet by not having sound effects); Ranco, Inc. . . . the familiar "Ranco around the world globe" and the complete line of Ranco controls, including an interesting display of evaporators of 1939 household refrigerators equipped by Ranco.

Detroit Lubricator Co. . . . spotlighted among the many Detroit valves and controls was a new meat box control for use with any type of refrigerant, having a definite cut-in setting and an adjustable cut-out setting; L. H. Gilmer Co. . . . belts to run anything and everything.

SLOW-MOVING PICTURES

Dole Co. . . . they proved you can make an interesting exhibit out of something so inanimate as a cold plate; Dayton Rubber . . . a slow-moving picture about Dayton V-belts.

Victor Mfg. & Gasket Co. . . . they make a claim of an innovation by Victor in the form of gaskets in sets; Bonney Forge . . . tools, wrenches, and tools, invitingly displayed; Alco Valve Co. . . . a new line of magnetic stop valves and the first showing of multi-outlet thermo valves, plus the introduction of a new combined valve and distributor.

Penn Electric Switch . . . controls under glass, the display counter arranged with all the care and finesse of a diamond exhibit in a jeweler's; also a slow movie; Wolverine Tube Co. . . . demonstrating how tubing is extruded.

Ansul Chemical . . . a laboratory set-up to show just how the new Ice-X works; Temprite Products . . . colored action drawing showing just what happens in a Temprite; Kason . . . . hardware for refrigerators; All-Steel Equip Corp. . . . modern vented lockers for refrigerated locker plants.

Marlo Coil Co. . . . coils, evaporative condensers, and more coils; Thermek . . . a machine for making spined coil surface; Aluminum Co. . . . Activated Alumina in the raw and packaged, plus aluminum products; Tyler Fixture Co. . . . display cases and other commercial refrigerators, 1939 style; White-Rodgers Co. . . . controls for refrigeration, air conditioning, and whatnot.

Refrigeration's Role, Present and Future, Stressed By Banquet Speakers

(Concluded from Page 1, Column 4)
American Society of Refrigerating Engineers, and an officer of the International Institute of Refrigeration. Latter duties have kept him in Europe during the greater part of recent months.

Poetry was furnished by Publisher F. M. Cockrell of AIR CONDITIONING & REFRIGERATION NEWS, who presented a "Toast to 1940" in verse, beginning humorously, continuing analytically, and gradually pulling out all the stops until he had his listeners on their feet cheering Old Glory and singing the "Star Spangled Banner." (For full text of this Toast see columns 4 and 5.)

Henry Burritt's pants? Oh, yes. It's a bit complicated, but their not being present enabled Campbell Wood to be present, and to deliver a remarkably fine speech on the state of the industry.

CAMPBELL WOOD TALKS

It was certainly no joke to Mr. Burritt. Nash-Kelvinator's vice president in charge of sales was driven from his home Sunday morning by a fire that destroyed not only his pants, but everything else he had—including the well-thought-out paper he was to read at the banquet.

So a hurried S.O.S. call was put through to urbane Campbell Wood, director of public utility business for Kelvinator, and E. L. Triffit of Geyer-Cornell-Newell. Despite the short notice, Mr. Wood proved to be an able substitute for Mr. Burritt.

J. D. Colyer, president of the Refrigeration Supplies and Parts Manufacturers Association, was toastmaster of the banquet. After introducing a group of distinguished guests, Mr. Colyer led off with a preamble on the great need this year for salesmen—salesmen with an intimate knowledge of their product and its relation to the business of the prospect.

SALESMANSHIP NEEDED

Proper sales training and direction of salesmen this year should make 1939 ring the bell, Mr. Colyer said.

The refrigerating machine, Dr. Poole averred in his address, ranks with the steam engine, the internal combustion engine, and electricity as one of the principal agencies in the development of human progress.

The cooperation and coordination of our industries, he pointed out, have given us much of the world's material wealth. Too often, he said, we hear only the clank of metal, see only the grime and the smoke and the relentless conveyor, losing the greater vision of a vast organization constructed for service and working for the benefit of all.

DEMOCRACY WILL PREVAIL

"In the troubled political world of today everybody must often ask himself whether the ideals of his own country are as sound as he would like to believe. Our opinions and reactions here on European happenings are largely influenced by what we are allowed to read in the way of controlled propaganda and not by direct observation.

"One cannot have experienced the recent crisis in England without feeling that Mr. Chamberlain was right. Nor can one come in contact with representative responsible people of other nations, as I have, without feeling that somehow the ideals of democracy will prevail.

"Our modern concept of democracy is one of giving or attempting to give everyone freedom to develop as fully as he can those talents which nature gave him. No one would claim that there are not inequalities and limitations not based on native endowments, yet certainly we have achieved in the United States a greater measure of individual freedom than is to be had nearly anywhere in the world.

"Let us see to it that we set the example of holding fast to our own fundamental precepts in order that we may continue to live as free men.

"The familiar phrase, individual initiative, is indeed the basis of our whole scheme of life, and the extent to which we have permitted it accounts for our wealth in considerable measure. In this country our individualism has exerted itself chiefly in industry, and we have, as a result, the greatest profusion of goods and equipment, all of which make for a better life."

RESEARCH IMPORTANT

Mr. Poole asserted that recent "pure science" investigations in the field of low-temperature physics may have far-reaching results, not only on the refrigeration industry, but on standards of living. Already, he pointed out, extreme cold is becoming more accessible on an industrial scale, especially in the petroleum, heavy chemical, and metallurgical fields.

Spectacular interest also attaches to low-temperature work on suspended animation, including the freezing of human blood for transfusion, the freezing of mothers' milk, and the freezing of toxins and anti-toxins. Reports that human being have been frozen into "suspended animation," are without foundation, though, Mr. Poole stated.

The speaker paid tribute to technical education in America, to societies such as the A.S.R.E., and to America's technical publications which, he observed "are marveled at" all through Europe.

AIR CONDITIONING'S PART

Air conditioning, he predicted, will go far and play a dramatic and important part in our business development of the future.

Campbell Wood declared that there were only two indictments of any consequence against the refrigeration industry: (1) that component parts and completed products were so well built that they don't wear out fast enough for replacement business; and (2) that too many refrigerators have been sold.

As to the first "indictment," Mr. Wood noted that even if the refrigeration industry were interested in making a product which could be replaced as often as razor blades or light bulbs, such a product wouldn't work long enough to make the original sale. The precision workmanship which makes initial performance possible also results in long life.

MORE FOR THE MONEY

Hence the customer gets a lot for his money, both in immediate results and in long-drawn-out satisfaction.

The second "indictment" can be answered by exhibiting the rapidly declining price curve of the refrigeration industry. As a result of remarkable mass selling efforts, equipment which couldn't be purchased at any price a dozen years ago is now available at a fraction of the then prevailing cost.

Mr. Wood thought that one of the industry's chief blessings was the type of men it had attracted. Costly manufacturing processes and great capital investments, he pointed out, have kept the refrigeration business largely in the hands of substantial manufacturers—who have, in turn, kept the industry singularly free of narrow-minded and self-destructive practices.

Chief danger, he believes, is that as the industry grows older it will forget the specialty selling fundamentals which have made its great success possible. Price selling—the line of least resistance—will indeed cause the industry to "go over the hump" and start "downhill."

PEOPLE BUY IDEAS

"These departures from old and proved selling methods, this emphasis on price in the making of a sale, is tied up with an erroneous notion that people buy concrete things. They don't. They buy ideas, mental pictures."

Success of concerted efforts to sell through creating mental images was recently shown dramatically by the National Salesmen's Crusade, in which 1,100 cities participated, Mr. Wood declared. In this case, the idea was that of putting men back to work ("sales means jobs").

"If everyone connected with this industry were to take wherever he went the idea of the improvement in efficiency and performance and convenience of today's refrigeration equipment," Mr. Wood concluded, "if he were to expose it on every possible occasion, our replacement problem would be transformed from a problem into a deluge of new business."

Philco Refrigerator In Production Jan. 23

(Concluded from Page 1, Column 2)
Storage Battery Co., parent company of Philco Radio & Television Corp., which took over control on Jan. 2, after acquiring manufacturing rights and patents of the Conservador line.

Floor space available amounts to 212,000 sq. ft. Approximately $50,000 will be expended on new machinery and equipment in an extensive plant rearrangement program.

Manufacture of the new line will begin Jan. 23, and it is expected that production will be increased several times more than the peak production formerly attained by Fairbanks, Morse & Co.

The new line will be shown to distributors and dealers at a national sales convention to be held in Palm Beach, Fla., Feb. 16 to 18.

Mr. Jones formerly was executive vice president of the home appliance division of Fairbanks-Morse. Other officers of the new subsidiary are: W. R. Wilson, treasurer, and C. F. Steinruck, Jr., secretary, both of Philadelphia. Officers, with J. S. Timmons of Philadelphia, constitute the board of directors.

Hughes Resigns Office With Warren Norge Co.

NEW YORK CITY—Frank J. Hughes, vice president of Warren Norge Co. and manager of its apartment house sales division, has resigned from these positions and also from his post as chairman of the board of governors of the Electric Refrigerator Association of New York. He has as yet made no announcement of future plans.

Entering the refrigeration field in 1924, Mr. Hughes became president of Brooklyn Servel Corp. In 1927 he joined Kelvinator as manager of that company's Brooklyn branch, and later took over all of Kelvinator's apartment house activities in greater New York.

In 1930 Mr. Hughes, in partnership with M. G. O'Harra, now Norge vice president in charge of sales, opened a Norge branch here. Five years later, when Warren Norge Co. was formed to take over all of Norge's New York activities, Mr. Hughes was made vice president.

One of the founders of the Electric Refrigerator Association, Mr. Hughes' wide experience and long association with the industry aided him materially in shaping many of this body's present policies. He was chairman of the organization's board of governors from October, 1935, until the time of his retirement.

A Toast To the Refrigeration and Air-Conditioning Industry

Proposed by F. M. Cockrell, publisher of Air Conditioning & Refrigeration News, at the first All-Industry Banquet in the Stevens Hotel, Chicago, Monday night, Jan. 16.

Mr. Toastmaster, Ladies, and Gentlemen:

The party's almost finished. It won't take long
For me to sing my little song.
Before we close this all-industry affair
May I propose a toast? Please listen with care.

First a toast to the ladies—God bless 'em all,
Petite and plump, or streamlined and tall.
Thanks, Mrs. Knight, and your committee
Who'll show our wives around the city.

A toast to you all who spent your dough
And traveled far to see this show.

A toast to manufacturers of parts and supplies,
Men of ambition, far-sighted and wise.
This Exhibition you've seen here today
Is bound to grow and sure to pay.
They're showing new products and making friends;
They're right on their toes and watching trends;
Each new application is a problem to lick.
They design a new model, work out a new trick.

A toast to "Nema" and mass production,
When sales increase, there's price reduction.
They advertise from coast to coast
With spreads and colors in the Post.
Big scale promotion, win or lose,
—And lots of pages in the NEWS.

A toast to the salesmen who ring the bell,
Who carry the message—and "catch the hell."
They're the boys who should be praised;
The way they've sold, the world's amazed!
Millions of units they've put in kitchens
To safeguard our health and home-life enrichen.
The good they've done can never be told,
Their job won't be through till everyone's sold.
Then they can start in all over again
And trade 'em new models with gadgets no end.

A toast to jobbers from Atlantic to Pacific,
With stocks of parts and supplies prolific.
They'll fill your order for belts and fans
And sell you valves in fancy cans.
They'll put up gas in five-pound drums,
Give good measure; not weigh their thumbs.

A toast to the engineers, the A.S.R.E.,
The professional branch of our family tree.
They were the pioneers who blazed the trail.
And found a way when others had failed;
Who wouldn't give up when the going was tough,
Though metals were poor and tools were rough;
When compressors got hot—and motors hotter,
And the SO_2 was full of water.

A toast to the dealers who display our wares;
Who are burdened with taxes and bowed down with cares.
They've all of the problems of running a store;
They support the church and feed the poor,
Give prizes for parties and join the lodge,
No charity program can they dodge.
With contributions they are bled,
No wonder they run into the red.
But worst of all are those retail lice
Those parasites who cut the price.

A toast to the contractor, sheet metal and pipe.
Air conditioning will soon be ripe,
Looks like a harvest for men with the shears,
But they have their troubles, and sometimes their tears.
If his price is too high, he won't get the job,
They'll say he is lazy or trying to rob.
But if he is "lucky" and has the low bid,
He may get the contract and be sorry he did.
When he sums up the figures and finds what it cost—
You know the story—the money is lost.

A toast to conscientious city inspectors
Who go around with their leak detectors
And make the careless obey the rule;
Send untrained beginners back to school.

A toast to service men, on call day and night,
Who know how to install and do a job right.
The boys who know how to plug the leaks
And squirt some oil to stop the squeaks.
When depression came and jobs were poor,
When wolves were howling at the door,
They didn't crawl into a hole
And cry for help or seek a dole.
They took their tools and set up shop,
They didn't wait and didn't stop,
Gave expert service far and wide,
Sold some gadgets on the side,
Started small and built up slowly,
Often lived among the lowly,
Shops in basements, shacks, and huts,
Those "independents" had the guts!
Now they're up and making money.
There's a story that's a honey!
We point with pride to their success,
A toast to them, I now address.

A toast to the good old U. S. A.
Where men are free and can say their say!
God knows when we'll get out of debt,
I wouldn't predict or make a bet.
But it's a cinch we'll never bend the knee;
The dictators can all go climb a tree.
We'll lick our problems, make jobs for all.
This industry is one that never did stall!
Here's a crowd that knows what to do
As it should be done under the Red, White, and Blue.
If you're all in favor of the American way,
Let's go on record here today.
We can't drink a toast, the tables are clear,
But we can all stand up and give a cheer!

Put the Spotlight there—

WATCH KELVINATOR AIR CONDITIONING *From the Inside—*

THAT'S WHERE THE PROFITS ARE!

An organization rockets up to success. You watch it grow. But there's no percentage for you unless you're *inside*, growing with it.

In this Kelvinator Silver Jubilee year more and more *air conditioning* distributors are "seeing the light", deciding to watch from the inside. Just cold business judgment, they say; but they can get good and hot over the far-reaching advantages of "Kelvinating" their selling program.

And the swing to Kelvinator is clinched generally by a look at the really extraordinary dollars-and-cents results accomplished *in the field* by our Sales Production Line plan. Distributors everywhere go for this proved plan.

No such *certainty* has ever before been applied to their selling problems. And the plan is so easy to line up. It divides selling into its fundamental steps, setting up a definite procedure for the most efficient "taking" of each step. Puts the sale of air conditioning equipment on a straight out-and-out and no-foolin' Production Line basis.

It's simplicity itself. Four rockbottom moves are made *in their right order.* Hunch, hurrah and guesswork are eliminated. Figures show that the Kelvinator Sales Production Line, running from raw material (or prospects) to the finished product (or sale), decreases costs and chalks up for the retailing distributor a lot more $ marks.

The complete line of equipment listed below at the left opens up to you widely diversified markets . . . for any season, or all seasons, of the year.

Use the coupon for further "inside" information.

Kelvinator

Kelvinator commercial products include: Room Coolers and Store Air Conditioners, Central System air-conditioning equipment—Automatic Heating equipment for oil, gas or coal—Commercial Refrigeration equipment—Water Coolers—Beverage Coolers—Ice Cream Cabinets

KELVINATOR 1914 1939 SILVER ANNIVERSARY

KELVINATOR, Division of Nash-Kelvinator Corporation, Dept. K-16 • Detroit, Michigan

Gentlemen: Please send me your Franchise Book on opportunities with:

☐ AIR CONDITIONING
☐ OTHER KELVINATOR COMMERCIAL EQUIPMENT

*Name*_____

*Firm Name*_____

*Street Address*_____

*City*_____ *State*_____

Distributor-Dealer Doings

Price Control Agreement of Most Help To Good Dealers, Buffalo Distributor Finds

By T. T. Quinn

DETROIT — Inauguration of a price-maintenance agreement with dealers under terms of New York's Feld-Crawford fair trade act did much to increase sales by so-called "legitimate" retailers in the last two months of last year, in the opinion of Meyer Goldman, director of advertising and sales promotion for the Joseph Strauss Co., Leonard distributor in Buffalo.

Strauss decided to put a price control agreement of its own into effect when preliminary conferences made it apparent that there would be some delay in bringing distributors as a group under the Feld-Crawford act, Mr. Goldman, here to attend the Leonard distributor conference, said.

While he is confident that Buffalo appliance distributors will eventually unite under the fair trade act banner, Mr. Goldman said that his company, after studying the question, had decided to take the advance step as an individual concern to protect the interests of its better dealerships.

"Retail sales drop in the Buffalo territory last year probably was even more severe than the national average," Mr. Goldman said. "The fact that we had a 'buyer's market' made it even more favorable for price chiselers on both radio and refrigeration.

"So, when a preliminary meeting on getting distributors together under the Feld-Crawford act indicated that there would be some holding-out among some companies, and consequent delay, we went ahead for ourselves.

"We set up a price-maintenance agreement on radio sales, informing our dealers that we would 'shop' them to make sure they kept in line. Among provisions was a maximum trade-in allowance of 10% of the price of the new set on radios more than two years old.

"Better dealers reported an almost immediate pick-up in sales. The 'chiselers' were doing less—and what sales they were getting were made at list prices. Our shoppers saw to that.

"We discovered the truth of what we'd already suspected—that buyers went to price-cutters not because they like to trade there, but because they wanted a discount. When they found they couldn't get one, they bought their radios from one of the better dealers, those who advertised and who offered reliable merchandise in addition to reliable servicing."

Drop in refrigeration sales last year has made the 1939 outlook somewhat doubtful, in the eyes of many of Buffalo's outlets, but Mr. Goldman thinks that better general business conditions will bring sales back to somewhat near normal levels.

General inventory conditions, at any rate, are much healthier than they were a year ago, he says. There'll be little prior-year merchandise to sell, so the market won't be hampered by "bargain" models and other unhealthy selling practices.

But the replacement end of refrigerator selling is beginning to be more than a casual problem, Mr. Goldman says, and even now distributors and dealers are seeking the answer to it.

TRADE-IN PROBLEM LOOMS

The city's refrigeration saturation as a unit is not overly high, but the high and middle income classes are well supplied with this type of equipment, so that almost every sale made to this group entails a trade-in. On the other hand, there is a large low-income class, made up mostly of foreign-born residents, who have little or no mechanical refrigeration equipment.

Little success has been encountered in selling to this group in the past, Mr. Goldman says, and he has hopes that a market for trade-in units may be found there. That's the logical outlet for models of this type, once they are reconditioned and put into proper shape for resale.

But there's another problem in selling to persons in this income group, he believes, and that's the matter of pride of ownership. The used refrigerators will have to be in good shape and good looking, or there'll be no sale.

LOW-INCOME SELLING

"People in the low-income classes have a very definite pride of ownership," he says. "That's not always true of people in the middle or high income groups. These people can afford better things, so they're not out to make an impression.

"Low-income customers, however, want the best-looking merchandise they can get for the money. It's something their friends are either impressed by, or look down on. So they're not the easiest type of persons to sell to.

"Logically, these people are the outlet for trade-in refrigerators in our territory. But the start may not be any too easy, unless the equipment is reconditioned and put into first-class shape, both mechanically and in appearance. It will have to be something they'll be proud to call to have their friends come in and see."

Women Get Corsages On Store's Birthday

BREMERTON, Wash.—The Electric City Store at 512 Fourth St., recently celebrated its second anniversary with a "Women's Day," during which corsages were given the first 35 women to visit the store. The firm is dealer in Frigidaire, General Electric, and Sparton refrigerators.

Prizes were also given for the largest charge, contract, and cash sales.

New Hampshire Kelvinator Dealers See '39 Line

MANCHESTER, N. H.—Two days before the 1939 Kelvinator line was to go on sale in New Hampshire, Manchester Coal & Ice Co., Kelvinator distributor, held an all-day preview showing of the line in its salesrooms here for the benefit of more than 50 of its dealers.

A. J. Precourt, president of the distributorship, greeted the retail men. Speakers included: John M. Dierkes, Kelvinator district manager; E. A. Norton, vice president of the distributorship; Taylor Harvey, Public Service Co. of New Hampshire; E. J. Demmer, division manager of Kelvinator's National Salesmen's Institute; Stephen Kelley, New England manager of Redisco, Kelvinator's financing agency; and Robert M. Williams, wholesale manager for New Hampshire.

Leonard Men Go Into 1939 Eagerly

(1) Smiles of agreement from Harry P. Brightman, W. E. O'Connor, and Arthur McGettrick, of Southern Wholesalers, Inc., Leonard distributor in Washington, D. C., greeted Vice President Henry W. Burritt's opinion that business will be better in 1939.

(2) Distributors George L. Roth, Omaha, Neb., and George B. Gray, Miami, Fla., discuss improved conditions in their sections of the country with Ralph Jones, west coast district manager.

(3) Reaching out for new sales opportunities this year was the luncheon-time topic of S. V. Louchheim, Motor Parts Co., Philadelphia; Norman McDonald, eastern district manager, and C. Wilkening, Philadelphia.

(4) Optimistic over the outlook in the Ohio territory are Walter E. Custic, Arnold Wholesale Corp., Cleveland; Ben Roe, district manager; Sheldon Bradford, Cleveland; Art Ridgley, Appliance Distributing Co., Columbus, and R. C. (Bob) Hager, Columbus.

(5) Walter L. Jeffrey, Leonard assistant general sales manager; J. Nelson Stuart, director of advertising and sales promotion for Leonard and Kelvinator products, and Lee Stratton, southern district manager.

G-E Distributor Heads Rhode Island League

PROVIDENCE, R. I.—E. Pulver Cook, president of E. Pulver Cook, Inc., General Electric distributor, was elected president of the Electrical League of Rhode Island at the annual meeting recently.

Other officers of the organization are: Harry Matthews, Blackstone Valley Gas & Electric Co., Woonsocket, vice president, associated clubs; Harry Pierce, New England Machine & Electric Co., Pawtucket, vice president, contractors; Raymond U. Lynch, Post & Lester Co. of Rhode Island, vice president, dealers' division; J. G. Armstrong, treasurer; Harry E. Dawson, secretary-manager; and W. M. Freudigman, assistant secretary-manager.

Warren Heads Sales of Iowa Stoker Firm

DES MOINES, Iowa—Elmer G. Warren has been appointed sales manager of the Fred Keating Coal Co. He formerly was manager of the stoker department of the firm, and has been with the company four years.

Dealer's Stock Damaged In $10,000 Fire

TIPTON, Iowa—Standard Appliance Co., tenant of the Miller building here, suffered heavy merchandise loss when the premises were destroyed by a fire which swept three buildings and caused damage of $10,000.

7 Field Men Appointed By Universal Cooler

DETROIT—Appointments and assignments of seven men as divisional managers of Universal Cooler Corp. have been announced by W. H. Dennison, manager of the company's domestic sales department.

Van Stewart, formerly connected with Norge Corp., has been appointed eastern divisional manager, with headquarters in New York City.

J. E. Brennan has been transferred from the eastern division and has been appointed divisional manager for the midwest states, with headquarters in Cleveland.

Bert E. Densmore, also formerly with Norge, has been named southern divisional manager with headquarters in Jacksonville, Fla.

Warren Brennan has been appointed divisional manager for Michigan and part of Ohio, with headquarters in Detroit.

J. A. Dennison has been named divisional manager for the southwestern states, with headquarters in St. Louis.

P. W. Blew, another former Norge man, has been appointed divisional manager for the midwest states, with headquarters at Universal Cooler's new Chicago display room and office in the American Furniture Mart.

Lloyd Sutton has been appointed divisional manager for the West Coast, with headquarters in the Furniture Mart in San Francisco.

Detroit ASRE To Be Norge Guests Jan. 20

DETROIT—Norge division of Borg-Warner Corp. will be host to members of the Detroit section of American Society of Refrigerating Engineers and their wives or girl friends at a party to be held at 9 p.m. on Friday, Jan. 20, in the Wardell hotel, 15 E. Kirby St.

This is the Detroit section's social gathering of the year, and supplants, for the month, the educational meeting usually scheduled. The party will be informal, and will feature dancing, entertainment, and food. Since there will be no charge in connection with the affair, attendance will be limited to A.S.R.E. members and their partners.

Ira H. Reindel of Norge Corp. is in charge of arrangements for the event.

State Wage-Hour Bill Asked In Wyoming

CHEYENNE, Wyo. — Appliance dealers in Wyoming will be brought under wage-hour provisions similar to those of the new federal act if the Wyoming legislature passes a model wage-hour bill drafted and submitted by organized labor groups in the state.

Proposed state law is a companion measure to the federal act, states Martin Cahill, president of the state Federation of Labor, and if it is passed, the general minimum wage will be set at 25 cents an hour, and the maximum hours at 44 a week. In 1945, the proposed law provides, wage minimum will be raised to 40 cents and hours reduced to 40.

Lippert Joins Gibson As Range Specialist

GREENVILLE, Mich.—Harry W. Lippert, formerly promotional associate for Borg-Warner Corp. in the Southwestern section of the country, has joined Gibson Electric Refrigerator Corp. here as range sales specialist.

Before his association with Norge, Mr. Lippert was with Consolidated Edison Co. of New York City, Estate Stove Co., and A. J. Lindeman & Hoverson Stove Co.

Refrigerator Taxes Total $175,815 In November

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators during November, 1938, totaled $175,815.31, compared with $550,-297.90 in November, 1937, a decrease of 68.5%, according to figures released by the Bureau of Internal Revenue.

New Control Used on Westinghouse Units

(Concluded from Page 1, Column 2)

compartment and about an inch and a half from the froster, the methyl chloride gas contracts with cold and expands with heat, automatically expanding or contracting a metal bellows no larger than a 50-cent piece, which in turn stops the compressor motor.

The control, it is said, will maintain a constant temperature after it has been set at any point between 34 and 50° F. In addition, it is capable of producing extra-fast freezing at as low a temperature as —20° F. in the evaporator.

In the standard models, a temperature-sensitive bulb in the rear of the froster operates the bellows tubing to regulate the cycling of the compressor mechanism, to maintain desired food compartment temperatures at eight specific points.

Some 120 parts have been eliminated from the refrigerating mechanism, through use of an impedance tube to regulate the flow of the refrigerant. This 7½-inch full-hard copper tube has an interior orifice of four hundredths of an inch, providing proper resistance to the flow of the refrigerant from the condenser to the freezer unit while the compressor motor is operating.

EQUALIZES PRESSURE

When the motor is idle, the liquid refrigerant sinks in the tube to a level where it equalizes the pressure of the evaporated refrigerant leaving the froster for the compressor, thus practically eliminating the starting load on the motor, it is said.

Design of the tube is said to make possible faster freezing, because the flow of refrigerant into the froster begins immediately when the compressor motor resumes operation. It performs all of the duties of a liquid receiver, float, expansion valve, and motor unloader, and is said to eliminate surge of the refrigerant.

Third protective device, the "built-in Watchman," is continued in this year's Westinghouse line. Consisting of a bi-metal Spencer disc about the size of a 25-cent piece, the two kinds of metal expand and contract at different temperatures to insure automatic protection against overload on the compressor motor.

Split-phase, reciprocating, single-cylinder compressor is powered by an induction-type ⅛-hp. motor which does away with all brushes, commutator, or centrifugal switch mechanism.

DIRECT-DRIVE HOOKUP

Rotor of the motor is of the squirrel-cage type, mounted directly on the compressor crankshaft, eliminating all belts, gears, or pulleys. Rotor and stator are wound with heavy double cotton wire, developed especially for refrigerator motors.

Direct driveshaft of the compressor is mounted horizontally, placing it perpendicular to the crank, connecting rod, piston, cylinder, suction valve, and discharge valve.

Stator is pressed into a cast housing, which in turn is pressed into the steel shell of the compressor unit, providing direct metallic contact between the motor and the outer shell, through which heat is carried and dissipated. Shell is of heavy drawn steel, welded to eliminate scales, and hermetically sealed.

Separate 1/200-hp. motor operates a fan to force 90 c.f.m. of air through metal fan shrouds and cooling fins welded to the shell.

Condensing unit consists of a finned tube condenser coil, through which the refrigerant passes from the compressor on its way to the evaporator. Compressor and condenser are mounted in a tunnel of insulation, which acts as a guide for the air from the fan as well as insulation against noise.

Operating sounds have been cut down in the new units, and the compressor has been made freer of vibration by mounting two feet on cushion rubber at the bottom, and suspending the condenser on a third rubber mounting. Complete unit is encased in a sound-proof chamber.

Evaporator is made of Sanalloy, a high copper alloy. Some units also have a refrigerated shelf, to provide faster freezing of ice cubes. One of the shelves is removable to provide extra space for frozen fruits and desserts or ice cream storage space.

MEAT KEEPER LARGER

Interiors are designed to provide 10% additional storage space over same size models of last year's line, and the "Meat Keeper" has been enlarged to hold 15 lbs. instead of 10 as last year. Meat Keeper is directly below the evaporator, and has a temperature 4° lower than the rest of the storage space, with 85% relative humidity.

Movable storage compartment in the refrigerator bottom, for fruits and vegetables, has a transparent glass cover, independently operated so that drawer or cover may be moved separately. Glass top serves as the bottom shelf of the food compartment. Food drawer, of white porcelain trimmed in chromium, extends the entire width and depth of the storage compartment.

Exterior styling has been modernized in a "Gothic arch" effect, with a solid steel door of slightly convex design which spans the cabinet from side to side. This affords greater accessibility to storage shelves, and harmonizes with the rounded corner, single-piece steel construction of the rest of the cabinet, which is solid to the floor.

Door has two double ball-bearing hinges, chrome plated, and an "Ezy-Latch" door handle which works three ways by a push or pull to the right, left, or outwards. Micarta is used as the door liner or door pan, for greater protection as well as structural strength. Micarta breaker strips also are used in food liner and outer shell at the door jamb.

Six different kinds of insulation are used—mineral wool in the air baffle in the rear to deaden sound, "Kimsul" around refrigerant lines where they enter the froster, "Kersey Jute" behind lower front panel, controls, and front sides of the unit compartment, "Arborite" around the compressor unit and under the food liner, and "Thermotex" in the door. Balsam wool is used around the food compartment.

PORCELAIN FOOD LINER

Food compartment liner is of heavy steel with ground coat of porcelain on both sides to guard against rust. White coat is applied to the interior side. Bottom is acid resisting, and corners are rounded for easy cleaning.

All but one model in the new line include "Eject-o-Cube" ice trays, and all are finished in Dulux or porcelain. Four models from H3-39 to and including H6-39 are equipped with moonstone white chilling tray, two ice cube trays, a multi-service tray, and eight-point temperature regulator.

Six models from series A5-39 to E8-39 feature "True-Temp" cold control, the "Humidrawer" storage compartment, automatic interior lighting, built-in thermometer, sliding adjustable shelf, Meat Keeper, and refrigerated shelf. Number of ice trays varies with the model.

S6-39 model, finished in Dulux, has 6.2-cu. ft. capacity, and is equipped with two small ice trays, a small multi-service tray, and a refrigerated shelf, with eight-point cold control.

Largest model, of 19.2-cu. ft. capacity, has an output of 236 ice cubes, with eight ice trays, two service trays, two refrigerated shelves, two Meat Keepers, and two cold controls.

An Elbow Opens the Door If Your Hands Are Full

Left: Doors of the new Westinghouse units open with push or pull to right, left, in, or out. Right: Quick freeze control on the 1939 units will achieve temperatures as low as 20° below zero, it is claimed.

Sales Chances Greater Than In '23—Cosgrove

MANSFIELD, Ohio—Opportunities before the electric household refrigeration industry this year are bigger and better than they were even 15 years ago, when the business was in its infancy, in the opinion of R. C. Cosgrove, manager of the household refrigeration department of Westinghouse Electric & Mfg. Co.

In estimating that 1939 refrigerator sales will reach the 1,500,000-unit mark, Mr. Cosgrove points out that today there are 1,300,000 more wired homes without electric refrigeration than there were in 1923.

"Fifteen years ago, only 43,000 electric refrigerators were in use," he said. "In that year, less than 10,200,000 homes in the country were wired; today, more than 22,800,000 homes are wired, and 11,270,000 of them have electric refrigeration. That leaves, today, 11,530,000 wired homes without modern refrigeration.

"Let us analyze this market. Most authorities predict that 500,000 new homes and multi-family dwellings will be built during 1939. Paring 100,000 from this figure for conservatism's sake, that leaves a 400,000 potential refrigerator market in the cities.

BIG RURAL MARKET

"Rural electrification is coming to some 300,000 farm homes in 1939. On the basis of past experience, about one third of these farm homes, or 100,000, will purchase electric refrigerators during the year 1939. The number of people who are becoming dissatisfied with their present electric refrigerators which they bought a number of years ago amounts to something like 250,000. Over 1,400,000 refrigerators in use today were purchased seven years or more ago.

"Aside from this new construction and improvement market, a vast opportunity for refrigerator sales will be opened by reason of replacements. We estimate that 250,000 'old-vintage' refrigerators will be replaced with 1939 models. This is a safe figure, when you realize that there are 1,400,000 refrigerators which are at least seven years old.

REPLACEMENTS NEEDED

"But also remember that obsolescence is not the only reason for refrigerator replacements. One survey of 770 replacements disclosed that 16% of them were made because the former refrigerator was too small; better than 13% resulted from a desire to enjoy the conveniences of the new models; about the same percentage was credited to the new design and style appeal; 15% were based on a desire to reduce operating costs; and only 22.6% traced their cause to mechanical trouble.

"The refrigeration industry had come to regard itself as a depression-proof business. It had seen sales climb year by year almost without exception. In 1929 there were 778,000; in 1930, 791,000; 1931, 906,000; 1932, 798,000; 1933, 1,016,000; 1934, 1,284,000; 1935, 1,567,000; 1936, 2,000,000; 1937, 2,250,000. But in 1938 sales dropped. However, they dropped only to 1,150,000 and that, despite an inactive market, was a better showing than any other years except 1934 to 1937.

"Industry plans for 1939 justify my confidence, however, that this upward trend will be resumed.

"The electric refrigerator industry has grown up, and the refrigerator itself has become an automatic kitchen appliance to protect food, and consequently the nation's health."

Interior of '39 Gale Evaporators Lighted

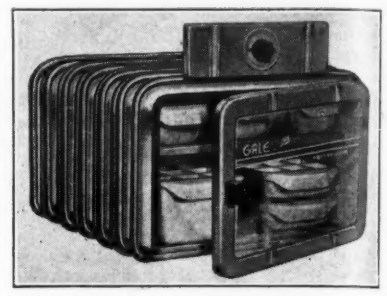
(Concluded from Page 1, Column 4)

new sealed evaporator has a sealed ice cube compartment which is protected from food odors, and which is said to maintain constant freezing temperatures. New in beauty, performance, and effectiveness, the feature has never before been used in any refrigerator, it is said.

Ice cube compartment, in addition to being sealed from air and moisture, uses the freezer-shelf principle for fast freezing. Because of the moisture seal, little or no air is carried into this compartment from the rest of the cabinet, it is said, resulting in a marked absence of frost accumulation between ice trays and freezer shelves.

Unusual feature is the use of a glass door on the evaporator, and interior lighting of the ice cube compartment, permitting the user to tell when the cubes are frozen without having to open the door.

Glass-Door Freezer



Gale's sealed evaporator has a glass door, and interior lighting.

Because the evaporator is sealed, taste is not transmitted to the ice cubes from foods in the cabinet, it is said. Another advantage which the new development is said to make possible is a more positive control of proper temperature and humidity within the cabinet itself, for proper food preservation.

In addition to the deluxe line, the company also is introducing a line of standard models in the same sizes.

New development in all models of the line is a new relation between exterior cabinet dimensions and interior food storage space. Improved design is said to provide 20% extra storage space. The new 7-cu. ft. model is said to require no more kitchen space than a conventional 6-cu. ft. model.

Father of O. Eastman Dies; Noted Indian Authority

DETROIT—Dr. Charles A. Eastman, noted Indian lecturer and, under his Sioux name of Chief Ohiyesa, internationally known writer on Indian life and customs, died here Jan. 8 after a brief illness. He was 80 years old.

He was the father of O. Eastman, former advertising manager of Universal Cooler Corp. and now in the advertising department of Kelvinator division of Nash-Kelvinator Corp.

Deluxe Model

6-cu. ft. Gale deluxe unit has exterior of Dulux, with satin chromium trim.

Profitable Sales Ideas

Low Operating Costs and Cool Kitchens Stressed on 'Repeat' Range Sales

FLORENCE, Ala.—Pushing the electric refrigerator in sales popularity with Wade Electric Co., 16-year-old appliance dealership here, is the electric range. Sales of this appliance run well over 100 units per year, reports A. C. Wade, proprietor, and many of them are made to customers who previously purchased refrigerators.

"It looks like now that nearly all the women want electric ranges," Mr. Wade comments. "They want this appliance because it adds a note of distinction to the kitchen, and makes for cool cooking the year around. Making sales is chiefly a matter of showing them that the operating cost is reasonable."

Proximity to Wilson Dam gives Florence favorable electric rates—3 cents a kilowatt for the first 50 kw., 2 cents for the next 150, and 1 cent for the next 200. And Mr. Wade follows up this first advantage with testimonials from users, and copies of their monthly electric bills, to drive home his argument that electric cooking is not costly.

Running from $3.50 to $6.50 per month for all electricity used, including a number of other electrical appliances and lighting in addition to the range, these monthly statements are good sales-clinchers in themselves, Mr. Wade finds.

He estimates that the average home uses 50 kw. for lighting, 50 for refrigeration, and 150 for the range. With Florence's low rates, this totals up to about $5.

Then he points out that fuel alone for a wood stove or coal stove costs more than $3 a month, and stresses the comparison in costs and convenience until it is a convincing selling point.

Like other appliance dealers in Florence, Mr. Wade includes the cost of installation in the price of the range, though no effort is made to make a profit on the installation. Instead, this cost can be used as a lever to urge customers to buy higher-priced ranges, and Mr. Wade says that the average selling price of his ranges is more than $150.

Sticking exclusively to one brand of appliance has proved a sound policy for Mr. Wade, for old customers satisfied with their refrigerators, radios, and washing machines buy ranges of the same make.

This repeat business is necessary if a specialty dealer expects to continue in business, Mr. Wade believes.

Perhaps the best selling argument for an electric range, Mr. Wade has found, is that of proving that the appliance provides a cool kitchen for the housewife to work in.

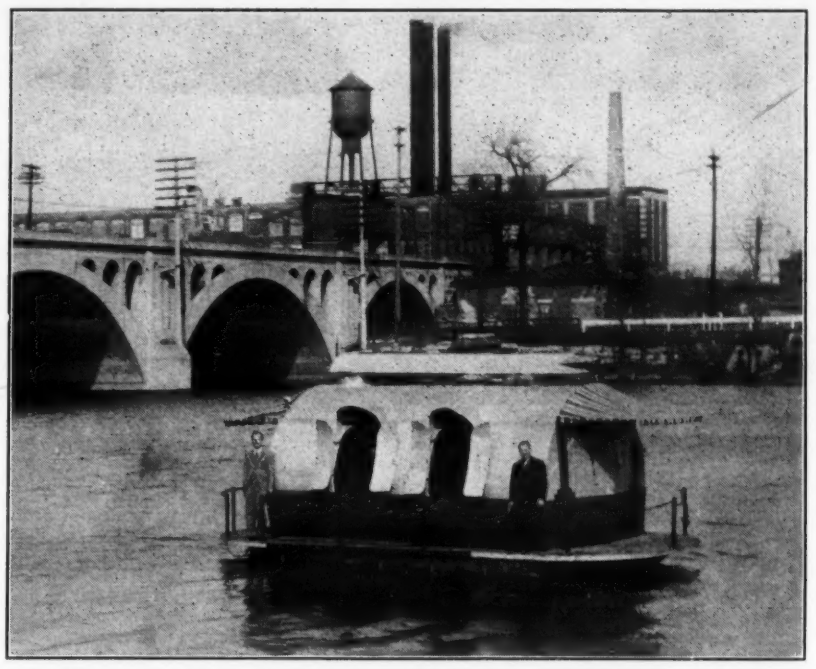
"We remind our customers that an oven meal can be cooked without any heat radiating from the kitchen, and that a vase of flowers may be left on top of the range without being harmed," said Mr. Wade.

"As customers install more ranges and water heaters they become more interested in the all-electric kitchen idea. Recently we have had the pleasure of drawing plans in cooperation with the manufacturer for several planned kitchens in which we also furnished the built-in cabinets."

One or two ranges displayed in the store are insufficient if a dealer wants to sell in quantity, Mr. Wade holds. He maintains from a dozen to 15 ranges on display at all times, both in the store and in the windows.

"Our customers have reached the point where they no longer consider an electric range a luxury," said Mr. Wade.

Ingenious Dealer Builds Houseboat Out of Oil Tank; 'Christening' Contest Results In Sales



"Kankakeean," pictured above, wouldn't win a "gold cup" for speed, but it has brought in sales for Tatro Bros., appliance dealership in Kankakee, Ill. Rene Tatro built the houseboat out of an oil tank.

• • •

KANKAKEE, Ill.—One of the most unusual houseboats ever built for use on the Kankakee or any other river has helped Tatro Bros. increase interest in and sale of electric refrigerators, laundry equipment, stokers, radios, and other electrical appliances.

Built by Rene Tatro out of a discarded 20,000-gallon capacity oil tank, the houseboat, now a pretty nifty looking job, created so much interest among Kankakee residents that the dealership decided to capitalize upon it with a "christening" contest.

Several prizes, topped by an $80 radio, were offered persons who submitted the name considered best suitable for the craft. To enter, it was necessary to fill out a blank giving name, address, and information concerning various appliances owned. Detailed information as to make and condition of radios owned also was sought.

No purchases were necessary to be eligible for one of the awards, but the information required of contestants furnished the store with an excellent list of appliance prospects. Several appliance sales were made during the two weeks the contest was run.

The boat, powered by a 1928 Chevrolet automobile engine, has five large drums underneath, to balance the huge drum used as the hull. Deck runs completely around the craft, and all deck space is protected by canopies.

"Kankakeean" finally was selected as a fitting name for the unusual boat. Mr. Tatro says that the cost of the craft has been more than repaid by the interest and qualified prospects aroused as a result of the christening contest.

Unusual Radio Programs Popularize New Outlet

WICHITA, Kan.—Two different types of "man on the street" radio programs were used by Durnil-Tomb-Norge Co., local appliance dealership, to popularize its store during the first two months of its existence.

Passers-by played a leading part in both programs. In one, they broadcast directly from a microphone set up in front of the store. In the other program, passers-by were invited to make recordings in a sound truck which was parked in front of the store. The records thus made were taken back to the radio station and a short time later were broadcast over the air, thus allowing the people who had made the recordings to tune in on their own voices.

Georgia Men Outline Plans For Kitchen Bureau Drive

ATLANTA—Georgia electrical appliance distributors and manufacturers' representatives recently met with representatives of Modern Kitchen Bureau to discuss and outline plans for cooperation with the bureau's 1939 program on refrigerators, ranges, water heaters, roasters, and all-electric kitchens.

Present at the conference were Harry Giles, Graybar Electric Co.; C. W. Lehner, Westinghouse Electric Supply Co.; O. M. Jackson, Georgia Power Co.; Collier Helms, Peaslee-Gaulbert Co.; W. J. Morley, Crane Co.; R. F. Dotson, Crane Co.; J. F. Gorley, Beck & Gregg Hardware Co.; W. D. V. Hopkins, Hopkins Equipment Co.; Herman Crout, H. C. Biglin Co.

J. J. Perry, Economy Electric Supply Co.; E. E. Bocock, Frigidaire; S. M. Davison, Westinghouse; H. A. Smeaton, Georgia Power Co.; F. B. Williams, Edison General Electric Appliance Corp.; Howard Peacock, General Electric Supply Co.; E. W. Welsh, Monarch distributor; J. M. Walker, General Electric; W. D. Alexander, W. D. Alexander Co.; Bob Lowe, Georgia Power Co.; and B. F. Weadock, Jr., Kitchen Bureau.

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Hermetic Units Gain Favor

SHOWINGS of 1939 household electric refrigerators show a decided trend toward hermetically sealed condensing units. Among the recent recruits to the hermetic unit—which already had such distinguished adherents as General Electric, Frigidaire, Westinghouse, and Hotpoint—are Kelvinator, Crosley, Stewart-Warner, Philco, Dayton, and Jewett.

Since G-E introduced it back in 1927 with the famous "squirrel cage" Monitor Top, the hermetically sealed refrigerating unit has led a checkered career.

General Electric and Westinghouse went steadily ahead with hermetic production from their respective starts in the refrigeration business. The former, which had been widely ridiculed at the time of the hermetic's introduction, pushed on to attain a major place in the household refrigerator business, selling in one record year approximately 40% of the industry's total.

Advantages of Hermetic Type

Features of the hermetically sealed mechanism, when it was first brought out, included:

1. No seal to get out of order.
2. No belts or pulleys.
3. No oiling necessary.
4. No fan.
5. Ease of shipping, installing, and replacement.
6. Prevented leakage of obnoxious refrigerants.

Against it were listed:

1. Costly to manufacture.
2. Costly to service.
3. Underpowered.

Long-Term Guarantees Follow

In the wake of the hermetic unit came the long-term guarantee policies, which split the industry wide open, and which still comprise a controversial subject.

Early competitors of G-E and Westinghouse ran into plenty of trouble, chiefly due to "sticking." Motors were not wound in air-conditioned factories in those days. Oil and refrigerant mixed, causing gumming. Motor insulation deteriorated, also causing "sticking." In fact, it was said that the life of its insulation determined the life of a hermetically sealed refrigerating unit. Other troubles developed.

But eventually these kinks were ironed out, and now there are several producers in the field.

Improvements Come

In the meantime, some of the original factors favoring the hermetically sealed mechanism have disappeared. Seals have been improved enormously. Refrigerant charges were reduced, and the Freon family of non-toxic, non-irritant refrigerants arrived upon the scene.

It is still true that the hermetic unit eliminates frequent service calls for oiling and belt trouble. But an even stronger talking point is the fact that women can be sold the enclosed type of mechanism. Its neatness, simplicity of external appearance, and the replacement policies all are said to have value as sales arguments.

Open Type Always Useful

Because of its many advantages —power, ease of service, economy of construction—it seems safe to predict that the open type unit will always have its place in the industry. Many distributors and dealers swear they will never sell anything else.

But it is interesting to note the general trend in the direction of the hermetic. Undoubtedly, a large majority of all refrigerators sold in 1939 will have enclosed mechanisms.

Preparedness

Walter Winchell's interview with Joseph P. Kennedy, United States Ambassador to the Court of St. James (England) hasn't received the public attention its content seems to deserve.

This interview corrects a misapprehension which has been common recently; i.e., that Hitler bluffed Chamberlain and Daladier into giving him what he wanted at Munich without a struggle.

Ambassador Kennedy reveals that Germany "had 9,700 fighting planes, all manned by experts as against England's 1,500 planes, only 500 of which were said to be dependable. This meant that Germany outmatched Britain by six and one-half times in the air."

Superior Air Strength of Dictatorship Won At Munich

Among those "in the know" down at Washington, it is being said that not only did Hitler and Mussolini have the winning hands at the time of the Peace of Munich —theoretically their combined air forces could have put London and Paris out of commission in a few hours, with sufficient reserves left over to protect their own countries —but that the capacities of their aviation factories are so many times greater than those of the European democracies that in any prolonged test of strength it would have practically been no contest.

Bottle-Necks In American Aviation Industry Studied

American airplanes are still the best in the world, but our production capacity is relatively low. And since airplanes are now used for cards in the international poker game, it would seem that there is a real need for plant expansion in this connection. The recent War Department survey shows a number of bottle-necks in our munitions production lines, bottle-necks which might hold us up for months after a declaration of war or an invasion. These bottle-necks should be opened up as soon as possible, the War Department believes, if America is to be respected by the ruthless warlords of Europe.

There are those who deplore expenditures for rearmament, point out that our blessed two oceans are our best defense against aggressors. There are also those, who note, wearily and resignedly, that the loud-mouths down in Washington are openly insulting the sensitively proud dictatorships, and are steering the Ship of State hellbent for a collision.

Foreign Propaganda Succeeding In America

It would seem, moreover, that the combined propaganda forces of England and Russia have succeeded in turning the American temper from "splendid isolation" to an aroused animosity against Germany, Italy, and Japan.

We pulled England's chestnuts out of the last war, and it appears that we are well on the road toward helping her polish off the next one. That being the case, we'd better prepare to build airplanes in quantity.

Parts Manufacturers May Receive 'Educational' Orders

Some of the parts needed by the aircraft industry can be turned out efficiently by refrigerator parts manufacturers, some of whom will receive "educational orders" soon. Other war "material" can be made by refrigeration manufacturers. Stewart-Warner, for example, is said to have the best equipped plant in the country for quantity production of hand grenades.

"War within 12 months" is predicted by some, pooh-poohed by others. But the inflamed utterances down at Washington aren't postponing the crisis by any means. If we must be dupes—and dopes—again, we'd better get ready to fight.

They'll Do It Every Time . . . By Jimmy Hatlo

LETTERS

Viva Espana!

Suministros Frigorificos, Ltd.
Accessories of All Types for the Refrigeration Industry
Maria Diaz de Haro, Numeros 48 & 50
Bilbao, Spain
VIVA ESPANA!

Sirs:

We duly received your favour of the 10th, noting contents, and now, we have also received the duplicate copies of the household service manuals and the air conditioning manuals.

With regard to the first copies of the above mentioned manuals which you point out to us that they were sent on March 7, we very much regret having to inform you that we have not received them up to the present. If by chance we receive them, some day, we shall inform you about it at once.

We have also to inform you that we have also received your Red Book, and we profit on this occasion to congratulate you for this publication which we consider of the utmost interest and service.

At the same time we take the liberty to remind you of your idea about the publication of your Master Service Manual in Spanish, as we know many persons that would be very glad if this book arrived to be a fact.

L. BERNALDO

Corrections in Fountain Service Article

Detroit, Mich.

Editor:

A correction should be made in the article on soda fountain servicing under the heading "Commercial Service" on page 11 of the Jan. 4 issue.

The fifth paragraph, column 1, reads in part "1 to 3 lbs. cut-in and 16 to 17 *lbs.* of vacuum cut-out." This should have read "16 to 17 *inches* of vacuum cut-out."

The sixth paragraph, column 1, reads in part "Usually the temperature should be 5° F. higher than the bulb. . . ." This should read "should be 5° higher than the package ice cream, but the adjustment. . . ."

ARCH BLACK

Wants To Locate Old Friend in the Industry

2307 Arctic Ave.
Atlantic City, N. J.

Editor:

I am writing to you in the hope that you may help me locate a friend of mine whose whereabouts I am anxious to determine. Being that he is connected with the refrigeration industry and knowing that he filled out a questionnaire which you sent him and he returned, perhaps you can aid me.

His name is Anthony T. Lombardi and resided at 2310 Arctic Ave., directly across the street from my house, but he has left the city to seek employment elsewhere.

If you can give me the name and business address of his employer during the summer of 1938, it may be of help to me.

Hoping that you have the name and address of his former employer in your file.

ROBERT F. WAGNER

". . . Interesting and Helpful"

168 Crescent Ave.
Buffalo, N. Y.

Sirs:

While I have been a subscriber to the REFRIGERATION NEWS since the original publication, I feel that inasmuch as I am not actively engaged in refrigeration and have not been for the past fews years the continuance of my subscription would be extraneous. Therefore, kindly discontinue my subscription to the publication of AIR CONDITIONING & REFRIGERATION NEWS which I have always found both interesting and very helpful.

E. L. BARNES

British Business and The Munich Agreement

Dean & Wood
5, Dowgate Hill, London, E.C.4

Editor:

With regard to the reactions of the English market subsequent to the Munich agreement, I must say that the position at the present time is very obscure. To begin with, as you are aware, this is the dead season for refrigeration and at any time it is difficult to estimate anything forward, taking figures as applying to the market in periods between October and February, of any one year.

The past season, from the domestic standpoint, has not been so good as was anticipated by the Trade Corporations, from their earlier estimates.

The commercial side this year has been quite good.

From our forward contracts in several quarters, which have just been concluded, estimates for next season are not less than for the past season, and in several instances show improvements.

One or two firms are wanting to order as and when required, instead of contracting forward, and I believe this is due to reaction owing to the Continental position.

So far as England is concerned, the feelings are of a very mixed character. When Mr. Chamberlain came back, for a few days everybody was extremely enthusiastic, but subsequent events have somewhat modified the general feeling and today, following recent events with regard to the Jews in Germany, people are very antagonistic. This, of course, has a depressing effect on trade and is most likely to restrict expansion.

The last few days I have made a number of enquiries amongst suppliers to the trade, and some of them, contrary to ourselves, have been very slack indeed.

We may have been lucky, but we stand in a rather different position to some of the firms, in that we are one of the few firms here who have become specialists in our own particular line, and even though the large manufacturers are not calling for big quantities, the dealers and service men are ordering up their smaller quantities continuously, thus keeping the ball rolling.

E. T. JONES

Quick Glances at Stewart-Warner Convention Goings-On

(1) Distributorship principals from New York and Chicago give the smallest 1939 Stewart-Warner radio a tuning-in workout. (2) Demonstrating that either one or two men can replace the new Stewart-Warner hermetically sealed refrigerating unit in a few minutes. (3) Chief Engineer Russ Ayres checks the Sterilamp in Duo-Temp job as he rests his hand on one of the sliding shelves.

Specialty Selling Methods

Variety of Backgrounds Promotes Range Sales

WICHITA, Kan.—A colorful model kitchen display, with emphasis on various cooking features, has been set up in the appliance department of Innes Dry Goods Co. here.

Background of the company's range display is composed of a series of panels, each in a different pastel shade and separated by white pillars. By placing any given range model against the desired background color, the salesman can give the prospect a better idea of how that appliance would look in her kitchen.

Usable by utility demonstrators for different types of promotions, this kitchen is credited with having contributed materially to the increased interest and traffic in the appliance department.

Model Electric Home To Herald Baltimore Show

BALTIMORE — Year-around air conditioning, an all-electric kitchen, acoustical treatment to reduce noise, and other space and labor-saving arrangements are incorporated in the model home now being built as herald for the annual Baltimore Home Show, to be held March 18-25.

Cost Records Clinch Water Heater Sales

ALLENTOWN, Pa.—Actual "before and after" records of electric water heater users, prepared in portfolio form for most effective presentation, constitute the best sales tool yet found by Paul S. Lutz of Pennsylvania Power & Light Co. for closing stubborn prospects.

Explaining "How I Sell Electric Water Heaters" in a letter entered in Modern Kitchen Bureau's contest for retail salesmen, Mr. Lutz says that comparative accounts of this type, showing records a year before and a year after the water heater was installed, are a final proof of value and economy that the prospect cannot easily overlook.

HAS 100 'HISTORIES'

"I have now accumulated almost 100 such accounts having some especially valuable sales story," he says, "and I have taken photographs of a number of my installations, showing the types of homes and the water heating installation. This has proven most effective."

Through use of this portfolio, he continues, he has been able to close sales which were too stubborn for other members of the sales staff. Illustrating the merit of such a portfolio, he offers the following instance:

"Some time ago I learned that a certain doctor was considering a change in his water heating service. He was heating his water with his house-heating oil burner.

"It so happened that this doctor had an electric water heater about 10 years ago and had it removed because of high operating cost.

RESOLD FORMER USER

"However, I went to see him. At first he would not give me any consideration, so I produced my portfolio and showed him that his electric service bills were not amounting to quite the amount I quoted him for the operation of his range, so that he could have absolute confidence in my water heating story.

"I told him that as an assurance he could depend upon my story, I would be glad to install the heater, and if he was not satisfied with either the service or cost of operation, I would remove it at no cost to him and refund his down payment. He has now received two monthly service bills which have amounted to exactly what I quoted him, and he has paid for the heater in full.

"Incidentally I have installed four electric water heaters for the same reason this doctor installed his."

$40,000 Yearly Income Results From 'Fill-In' Line of Appliances

INDIANAPOLIS — The electrical appliance business of Federal Auto Supply Co., started as a fill-in when the company's tire business began to go flat because of excessive competition, has developed into a $40,000-a-year proposition, according to Ed Johnson, manager of the firm.

Since the time five years ago when Mr. Johnson first decided upon electrical appliances as the type of merchandise which would best provide an income for the store's highly trained sales organization, afford room for expansion, and at the same time stop up the gap in sales volume formed by decreasing tire sales, he has rigidly stuck to certain merchandising principles.

Only nationally advertised lines are handled, for instance, as Mr. Johnson feels that the buying public has confidence in the products of only those manufacturers which operate on a nation-wide scale and which have proven their willingness and ability to back up their guarantees of performance.

NO 'CLOSE-OUTS'

In line with this policy, the company handles Norge and Crosley refrigerators, and Norge ranges, washers, and ironers, as well as several well known lines of radios and other household appliances.

All appliances are sold strictly on their merits. Sales or close-outs of old models are never condoned, on the theory that this practice cheapens the sales value of new merchandise.

Mr. Johnson's first major act upon acquiring his electrical appliance lines was to move his salesroom from the middle of the block to a corner location, which was readily accessible and afforded ample window display facilities. Frequently changed displays, both in the windows and on the sales floor, still constitute Mr. Johnson's principal method of advertising.

CUSTOMERS ARE PROSPECTS

One salesman works exclusively on the outside, following up leads picked up in the salesroom and through contact with the store's regular automobile supply customers.

Through 20 years of merchandising the same brands of automobile equipment, Mr. Johnson has built up among his customers a reputation of integrity and reliability, which has influenced many of the company's auto supply customers to patronize the firm's appliance department as well.

Appliance sales of Federal Auto Supply Co. are increasing so rapidly that in time this line will constitute the major portion of the firm's entire sales volume, Mr. Johnson believes.

West Coast Store Concentrates Salesmen, Advertising On Appliances For Week & Hangs Up Sales Record

OAKLAND, Calif. — Newspaper advertising, radio announcements, "action" window displays, demonstrations in show windows as well as on the sales floor, and cooperation of all employes in directing possible prospects to the appliance department all combined to result in one of the biggest appliance weeks ever experienced by Jackson's store here. A. L. Dean, manager of the appliance department, reported that sales for the week were 22% above sales for the corresponding week last year.

The newspaper campaign broke the afternoon before the drive opened with a full-page advertisement illustrated with cuts of the various appliances and with copy stressing features, prices, and terms. Attention also was called to the series of appliance demonstrations which the store was sponsoring.

SPOT ANNOUNCEMENTS

Spot announcements over local radio stations preceded and followed the sale, featuring the same information that appeared in the newspaper advertisements.

Show windows on both sides of the main entrance were devoted exclusively to appliances. In one was a pile of antiquated washing machines —a mass of corroded tubs, rusty iron frames, exposed gears, and oil-soaked wood. Flanking this heap was a display of modern home laundering units, white and glistening. From a clothesline overhead hung full-sized paper cut-outs of personified garments, their faces seemingly wreathed in smiles at the sight of this progress.

In a specially arranged booth in the window on the opposite side of the entrance, a young woman busily demonstrated various appliances. This demonstration booth was indirectly lighted, and was equipped with a public address system (the loudspeaker being outside the window) by means of which the demonstrator could attract the attention of passers-by and explain the various features of the unit being displayed.

BIG FLOOR DISPLAY

Practically half of the store's main sales floor was devoted to appliances, large and small. More than 60 refrigerators and washers were included in this display, some of them in actual operation. Along the aisle leading away from the main entrance, seven demonstrators were stationed to show off mixers, coffee-makers, toasters, and similar appliances. Samples of various foods and drinks were distributed to shoppers.

Every employe of the store was on the alert for prospective appliance customers, and all leads were immediately turned over to the appliance department. This ferreting out of prospects was stimulated by the offer of bonuses—ranging from 50 cents to $5—for each lead turned in.

Two cards, each with 50 designated sums within the limits of the bonus range concealed under seals, were prepared. Any employe referring a prospect to the appliance department was entitled to pull one of these seals, and was paid the amount revealed. Seventy-five of these bonuses were awarded during the week.

Major Appliances

Range Sales Increase Seen for Birmingham With New Agreement

BIRMINGHAM, Ala.—Aided by a new "objective rate" on electricity and a revised utility-dealer agreement on electric range installations, appliance distributors and dealers are predicting an increase of 20 to 30% in sales during 1939 over 1938.

Sales curve began rising in the fall, after a rather dull year, and some of this gain is attributed to the "objective rate," which has a number of good merchandising angles.

Also stimulating sales has been the new electric range installation set-up, under which a charge of $15 is made, included in the purchase price of the appliance. Of this amount, $9 goes to the utility and $6 to the dealer.

This is a considerable reduction from previous installation rates, and is expected to step-up sales to non-home owners, for whom the prior cost was excessive.

Appliance sales leader through the fall months has been the radio, with sales of table and bedroom models especially good. Stokers have been in second place in dollar volume, with refrigerators a rather weak third, most sales coming from floor traffic.

Washer and ironer sales also have had a slack fall, but are expected to pick up considerably now that the holidays are over.

Kanker Heads Detroit Vapor Stove Sales

DETROIT—Ed. J. Kanker has been appointed sales manager of the Detroit Vapor Stove division of Borg-Warner Corp., and David Lane will represent the stove division in the Pittsburgh area, it was announced by M. G. O'Harra, vice president in charge of sales.

Mr. Kanker has for the past year been eastern district representative for Detroit Vapor Stove division, and prior to that was representative in the western Pennsylvania and western New York territory. Since returning to the factory he has been giving special attention to the product and program for 1939, which will be announced this month.

Mr. Lane has for the past 10 years represented Salmanson & Co., New York City, in the Pittsburgh area.

Westinghouse Ironers Have 'Tailored Touch'

MANSFIELD, Ohio—A new electric ironer which is said to add the "tailored touch" of hand ironing to the inherent time-saving efficiency of these machines has been announced by the merchandising division of Westinghouse Electric & Mfg. Co.

Said to be the first electric ironer including this feature, the machine has a lever that, when turned on, automatically calls for action similar to that of a battery of hand ironers moving in unison over cloth. The sheen effect of hand ironing is produced by the rocker action of the roll shuttling under the shoe as the fabric is fed through the machine.

Foot pedals control the speed at which the roll turns so both hands of the operator are free to arrange clothes, thus assuring leisurely operation and eliminating any "scramble against speed." Pedal control, say engineers, permits the operator to take time enough to arrange clothes, to stop and press a hem, or to thoroughly dry heavily dampened pieces during one trip through the ironer.

The new ironer has been designed with an unobstructed roll with two completely open ends. These fully open ends make possible "creaseless" ironing, in addition to providing more ironing space, as either or both ends of the roll may be used independently or simultaneously. The roll is 7 inches in diameter, 26 inches long, and turns six times a minute. It has an ironing capacity of about 24 square feet per minute.

Ironing cabinet, of heavy-gauge steel, is electrically welded and duo-coated with white porceloid. Touching the rubber-tipped knobs drops the cabinet ends down to form extension shelves on both sides of the ironer. Because both ends of the cabinet top are open, the heat radiating from the shoe is carried to the sides and so is not felt in the face of the operator.

Controls for this new ironer also have been simplified. The control panel, with its heat and motor switches and pilot light, tilts forward when the indentation on the switch panel is pressed. A pilot light tells the operator when the current is on. Closing the box turns off the current automatically.

The new shoe back produces from 25 to 30% more usable heat than conventional ironers, yet is from 100 to 150° cooler, it is said. This new efficiency is produced by placing glass wool insulation so it throws the heat forward into the ironing surface, rather than dissipating it into the air to be lost or to make the operator uncomfortably warm.

Porcelain enameled shoe back, in addition to its heat reflecting qualities, is easy to clean. A temperature range of from 275 to 475° is available, providing correct ironing temperatures for any fabric, including rayon, silk, cotton, wool, or linen, and proper heat for steaming or pressing.

Adjust-o-matic temperature control is provided for the 1,475-watt heating element serving the shoe. The heating element is divided, each part being controlled by a separate thermostat and allowing the temperature at both ends of the roll to be regulated.

Adjustable pressure is maintained by a strong spring set to apply from 150 to 175 lbs. pressure. Universal suspension gives automatic alignment with the roll, making it self-adjusting to thin or thick pieces. Emergency release lever is located under the lap board out of sight, but available for emergency. When the lever is pushed in, the shoe is released from the roll. A touch of the knee control automatically resets the shoe.

Cincinnati Stoker Sales Total 950 In 1938

CINCINNATI — Stokers installed in this city between Jan. 1 and Dec. 7, 1938, numbered 950, official city permit figures show. During the same period, 14 oil burners and 220 gas burners were installed.

Giving G-E Washers a Three-Way Test

General Electric's "sales bag" presentation for electric washers is aimed at attracting prospects by ears, by touch, and by eye. Above left: using the "mechanear" to determine quiet operation. Right: operating the one-control wringer with blindfold bag. Below: roll-over corks demonstrate washing action, making a continuous circuit while the unit is operating.

• • •

Rural User Finds That Electricity Is Cheaper

LAMAR, Col.—Sample of the savings being made by some members of the Bent-Powers Rural Power Lines Association of Lamar since they started "living electrically" is the case cited by E. G. Rash, superintendent of the association.

The member in question, Mr. Rash reports, had been accustomed to paying $2.10 a week for ice, in addition to buying gas for lights and heating irons. He had no radio.

Then this member began purchasing electricity from the association. Now he is using a 6-cu. ft. refrigerator, a table radio, an electric iron, washer, and toaster—and he reports that his electric bill is running only about 77 cents a week.

Topping even this, however, is Mr. Rash's statement that some of the association members who used to sell milk have discontinued this practice. "They like it so well when it is kept cold in the refrigerator," he explains, "that they drink it themselves."

Iowa Water Heater Co. Draws FTC Ruling

WASHINGTON, D. C.—In a stipulation entered last week with the Federal Trade Commission, L. B. Patterson, trading as Nu-Way Manufacturing Co., Des Moines, Iowa, has agreed to stop representing that his Speed King water heater device will give the user all the hot water wanted "in less time than it takes to whistle the chorus of a popular song," or that it provides the fastest way known of heating water.

Mr. Patterson admitted that, according to reliable scientific authority, the device does not afford the quickest-known method of heating water, and that it will not heat water boiling hot in 60 seconds, or almost instantly.

The company also agreed to stop representing that salespersons or dealers will have an opportunity to earn any amount in excess of that made by regular salespersons under normal business conditions.

Three-Way Performance Test Designed To Put G-E Washer Sales 'In the Bag'

BRIDGEPORT, Conn.—To aid the washer salesman in cashing in on results of National Washer and Ironer Week and to continue its recent efforts to simplify and dramatize the sales presentation of an electric washer, General Electric Co.'s home laundry section has devised a new kind of sales aid to put the case for the G-E washer briefly by ear, by touch, and by eye.

New retail demonstrator is called the "sales bag," and consists of a "blindfold bag" to test wringer operation, the "mechanear"—a tipped stock having the same function as a stethoscope and used to test silence of washer operation—and three corks which test effective washing action.

THREE SALES POINTS

Sales presentation of the washer has been simplified to three main points—the adjustable gear case mechanism, with four moving parts; lubricated for life; the one-control wringer which starts and stops and rolls, tilts the drainboard, reverses the roll, functions as a safety release; and the "Activator" washing action.

In demonstrating the washer, the G-E salesman places the tip of the "mechanear" near the mechanism of the old washer and allows the prospect to hear the clashes which indicate wear, lack of lubrication, poor design, or lack of accessible adjustments. The performance is then repeated with a new washer for contrast. Both tubs are filled with water.

Next, the "blindfold bag" comes into play, and is slipped over the wringer of the old washer. Prospect is asked to operate her wringer with this handicap. Her failure to remember where adjustments are located and her fumblings with the hidden device provide excellent sales points when the bag has been slipped over the one-control wringer of the new machine. Even so encumbered and hidden, the control bar is easily manipulated, it is claimed.

Finally the three roll-over corks are thrown into the full tub of the new washer. They are drawn under near the activator post, reappear out near the edge of the tub, and are said to repeat the action continuously. If they float on the surface of the old washer, it will signify lack of effective washing action. If the corks go under slowly, the action is held to be not too efficient. If they go under the water and do not reappear, the action is claimed to be too severe.

FURTHER USE SUGGESTED

Where everything else fails, it has been suggested by Lee Wichelns, G-E advertising supervisor for home laundry equipment, that the sales bag be left with the prospect's husband, who can use the stick to prod his spouse into doing the week's wash the hard way, and can put the corks into his ears and the bag over his head, thereby insulating himself against any further progress.

According to company reports, however, there have been no instances of the latter procedure reported to date, which, it is felt, indicates that the new sales tool is proving effective.

Major Appliances

'Directional Heat' Ovens Feature New Hotpoint Electric Ranges

CHICAGO—Twelve models with new modern styling, oversized "directional heat" oven with five-heat switch and "duo-speed" broiler, large and utility size "select-a-heat" Calrod surface units, and new diffusing "Venetia-Lite" are in the Hotpoint electric range line for 1939, just announced by Edison General Electric Appliance Co., Inc.

Three models in the Royal line and four Deluxe models are designed to serve the top-price markets, while five Standard models including entirely new "Metropolitan" and "Bellwood" ranges, are designed for the lower-price brackets.

Leading new feature is the "directional heat" oven with its five-heat switch, adding a new broiling heat. The five heats are "preheat," for quick baking temperatures; "bake 1" for average baking and roasting operations; "bake 2" for large quantity baking and roasting; "speed broil" for high temperature charcoal-type broiling, and "broil" for cooking meats well done and for toasting.

All Royal and Deluxe units include this feature.

'FIVE-HEAT' UNITS

The "five-heat" feature of the Calrod surface units, introduced last year in the utility burner, has this year been added to the large burner as well. Higher priced models are fully equipped with units of this type, and Standard models have the feature in the utility size.

The "Venetia-Lite" is said to mark the introduction of indirect-type lighting to the electric range, the four louvers distributing the light evenly over the entire range surface.

New "in-and-out" switch operates the warming compartment for food or dishes, standard on one of the Deluxe models and optional on others. A thermostatically controlled Calrod unit is the heat source. All models but one have a six-quart "thrift cooker."

The "Moderne" model has a built-in chime for timing short cooking operations.

LARGE SIZE OVENS

Ovens of all units are large, fully insulated, and have porcelain interiors. Oven shelf supports are level and easily cleaned. Shelves are adjustable as to height. One shelf is reversible, so that it can be raised or lowered an additional inch and a quarter.

The new "Metropolitan" and "Bellwood" ranges have been added to the line to appeal to the lower price market.

Every range may become as completely equipped as its buyer wishes to make it, regardless of the original cost. Lamps are available for all models except the Empire Royal and the Milford apartment house model. A deep fat fry basket for use with the "thrift cooker" kettle is standard equipment on Royal and Deluxe ranges.

Another accessory feature is the "broil-or-grid combination aluminum griddle and broiler pan, equipped with a smokeless broiler rack. It can be used with any model. When used as a broiler, the aluminum pan becomes a serving tray. On the large surface unit it becomes a griddle.

KITCHEN WASTE UNIT

New kitchen waste disposal unit announced by Hotpoint, and known as the model J-2 "kitchen waste exit," may be installed in any sink that has, or can be made to have, a 5-inch drain opening, it is said.

Special hydraulic press can be furnished to reform openings on existing metal sinks, where necessary. Reworking porcelain sinks to admit the unit is not recommended.

Safety control cup with control handle serves as a sink stopper in the "seal" position, as a starting switch in the "on" position. In the "remove" position the control cup may be used to drain the sink, or be lifted out.

Shredding compartment will hold three quarts of refuse. Shredding element is of carboloy, and reduces the waste to minute particles, which combined with the cold water which is run through the machine forms a flowing water pulp. Gravity and centrifugal pump action draw this pulp through a strainer and discharge it into the house drain.

A colorful merchandiser display which fits around the unit and describes its functions has been worked out as a sales and demonstration aid.

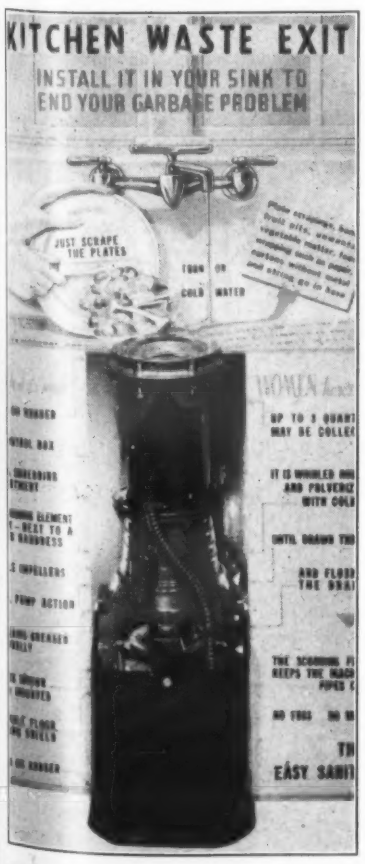
For demonstration purposes, a glass trap may be installed so that the prospect may see the water consistency of the discharge. Where a plumbed-in machine is not available, a piece of soft pine wood can be pulverized without the use of water.

DISHWASHER DEMONSTRATOR

Designed as a help to dishwasher sales is Hotpoint's home demonstration kit, which permits the housewife to use the dishwasher on trial in her own home without extra plumbing or installation expense.

Simple to assemble and transport, the demonstration kit consists of a few accessories, easily attached to a stock model dishwasher before it leaves the sales floor; a package of "Calgonite"; a marked aluminum pail for measuring quantities of water into the machine; and a rubber-wheeled dolly for moving the machine about.

Demonstration plan is to move in the machine, cleanse one load of dishes for the housewife, and leave the machine for a few days for her to try for herself.



This display panel, which fits around Hotpoint's waste unit, explains how it operates.

Vacuum Cleaner Sales Increase in November

CLEVELAND—Household electrical vacuum cleaner sales in November, 1938, increased over the same month in the preceding year for the first time since August, 1937, totaling 119,506 as compared to 118,780 in November, 1937, and 119,805 in October, 1938, reports C. G. Frantz, executive secretary of the Vacuum Cleaner Manufacturers' Association.

Sales for the 11 months last year were 1,179,720, a decrease of 26% from the same period in 1937. Average retail price of floor model vacuum cleaners sold in the 11 months of 1938 was $59.03, compared to $55.57 in the same months of 1937. Hand model average price was $14.68, as compared to the 1937 average price of $13.73.

Free Washer Given To First Baby of Year

MANCHESTER, N. H.—Diapers of Manchester's "New Year's Baby" (first baby born here in 1939) will be washed in style in an Easy washing machine donated to the child's mother by A. L. Franks & Co., local dealer for the Easy line.

The Franks company announced its offer in an advertisement in local newspapers. This advertisement featured a baby's smiling face and the caption: "I'm going to get the best of care with the help of an Easy washing machine."

Waukesha Law Affects Appliance Salesmen

WAUKESHA, Wis.—Despite vigorous protests by a dozen local business men, an ordinance regulating solicitors and canvassers here by requiring the payment of a license fee was passed at a recent council meeting.

The ordinance prohibits any person or firm from selling goods or services without first obtaining an identification card at the police department. It is hoped that the measure will eliminate undesirable persons who go from house to house selling illegitimate goods or selling by offensive methods.

Gordon M. Hey, president of the Trades and Labor, expressed the opinion that there was no need for such a law, and the action would give Waukesha a "black eye" among outsiders doing business in the city.

Portable Electric Range Marketed By Eureka

DETROIT—Creation of an electric range division of Eureka Vacuum Cleaner Co. to manufacture and market a portable electric range bearing the Eureka name has been announced by Fred Wardell, president of the company.

Named manager of the new division is George H. Wilkens, veteran household appliance merchandiser who has had experience in this field both in this country and abroad.

Topping the new Eureka range's list of features are patented cooking surfaces on each side that fold up compactly into recesses in the range body when not in use. Other features include limiting switches and automatic oven heat control. Retail price of the new unit has been set at $39.95.

Full patent rights on this range have been acquired by the Eureka company, Mr. Wardell announced, and a complete plant is being tooled up to produce the range in quantities large enough to supply the anticipated market.

Completely self-contained and portable, even to a carrying handle on top, the Eureka range needs only to be plugged into the nearest convenience outlet to be placed in operation, it is said.

The new unit is of sturdy construction, with heavy-gauged, non-tipping shells; rock wool insulation; baked vitreous porcelain enamel lining; and efficient oven ventilation. Exterior is finished in white, with black and chrome trim.

Mr. Wilkens expressed the belief that the Eureka range should find a wide market particularly through utilities, and it is this field of merchandising with which Mr. Wilkens is most familiar.

After being "bombed out" of the Spanish properties of Stone & Webster Service Corp., where he held the position of sales manager, Mr. Wilkens became general sales manager of the Colombian (South America) operating property of American & Foreign Power Co., an Electric Bond & Share affiliate. He has organized and operated merchandising departments in Haiti, Santo Domingo, and Mallorca (Spain).

Prior to his foreign activities, Mr. Wilkens was connected with Duke Power Co. in North Carolina and with Commonwealth Edison Co., Chicago.

11-Cent Range Repair Cost Found in 200-Unit Study

PHILADELPHIA—Average repair and replacement costs of only 11 cents per year per apartment on electric ranges was found by the Juniata Park Housing Corp. in a survey completed recently. The survey covered 200 electric ranges and 84 two-burner hotplates, and included complete replacements and repair parts over a period of three years and three months.

Occupancy in the housing project is high, averaging 98%, and families average 3.05 persons, so the equipment is thought to represent above average repair replacements. Plans are now under way to replace 15 hotplates with an equal number of electric ranges.

Air Conditioning

Method of Calculating the Heat Load In An Air-Conditioning System

Editor's Note: This condensed and simplified form for use in calculating the refrigeration equipment required for an air-conditioning system has been worked out by Refrigeration Economics Co., Canton, Ohio.

Heat loss factors for various types of walls and partitions, and for people and equipment, are given in the first table. Second chart is a calculations sheet for listing the various load factors and determining refrigeration requirements, as well as price of the equipment.

Data For Estimating Air-Conditioning Load

Below we list heat loss factors for various types of building walls, floors, ceiling, and roofs. Note that these factors are based on a conditioned space temperature 15° below outside, and all factors give the heat gain in B.t.u. per hour per square foot. If some different condition is required use the factors as given and then alter your total radiation and ventilation heat gain by proportion.

	Plain	Same, Plaster Inside	Same, Furred with Air Space	Same, Air Space Filled with Rock Wool
8″ brick wall	7.5	6.9	4.5	1.8
12″ brick wall	5.4	5.1	3.6	1.65
16″ brick wall	4.2	4.1	3.0	1.5
6″ concrete wall	11.9	10.5	5.9	1.95
10″ concrete wall	9.3	8.6	5.1	1.95
8″ tile wall	6.0	5.6	3.9	1.65
12″ tile and brick wall	5.4	5.1	3.6	1.5

Wood Wall: siding, sheathing, studding, plaster inside, 3.75. Same filled between studs, 1.1.

Partition: studs, lath, and plaster one side, 9.3. Same, plaster both sides, 5.1. Same filled, 1.15.

Partition: 4-inch hollow tile, plain, 6.8. Same, plaster one side, 6.3. Same, plaster both sides, 6.

Floor: single wood, 6.9. Same, plaster below, 4.2.

Floor: double wood, 5.1. Same, plaster below, 3.6. Same filled insulation, 1.0.

Floor: 6-inch concrete, 8.9. Same, plaster one side, 8.1. Same, furred, air space, and plaster, 5.3.

Roof, flat: 1-inch wood on joist, 7.4. Same, ½-inch insulation, 4.2.

Roof: 1-inch wood, plaster below, 4.8. Same, ½-inch insulation, 3.2. Same, 4 inches Rock Wool, 1.0.

Pitch roof: shingle, sheathed, 8.4. Same, plaster inside, 4.4 Same and ½-inch insulation, 2.4. Same and 4 inches Rock Wool, 0.9.

Glass windows or skylights: single, 17.0. Double glass and air space, 6.8.

HEAT GIVEN OFF BY PEOPLE AND EQUIPMENT

One person at rest	Sensible 225	Latent 159	Total 384
One person at office work	Sensible 225	Latent 265	Total 490
One person at clerking, busy	Sensible 225	Latent 375	Total 600
One person at serving, busy	Sensible 325	Latent 675	Total 1,000
One person at dancing	Sensible 452	Latent 938	Total 1,390
Electric lights and electrical appliances	3.4 B.t.u. per watt		
Motors up to ½ hp. (motors and driven machine heating conditioned space)	4,250 B.t.u. per hp.		
Motors ½ to 3 hp. (motors and driven machine heating conditioned space)	3,700 B.t.u. per hp.		
Motors above 3 hp. (motors and driven machine heating conditioned space)	2,950 B.t.u. per hp.		
Motors up to ½ hp. (driven load not heating conditioned space)	1,705 B.t.u. per hp.		
Motors ½ to 3 hp. (driven load not heating conditioned space)	1,155 B.t.u. per hp.		
Motors larger than 3 hp.	405 B.t.u. per hp.		
*Coffee Urns, 10 gallons	16,000 B.t.u.		
*Gas Ranges, restaurant	100,000 B.t.u.		
*Gas Ranges, residence (average maximum usage)	23,000 B.t.u.		
*Steam Tables	2,000 B.t.u. per sq. ft. per hr.		
*Dish Warmers	600 B.t.u. per sq. ft. per hr.		
*Clothes Pressing Machine	15,000 B.t.u. per hour		
*Gas Hair Drier	20,000 B.t.u. per hour		

*Note: About two thirds of the heat from these items may be saved by effectually ventilated hoods, mechanically exhausted to outside. However, the air so exhausted must be replaced with outside air and that load should be allowed for under ventilation and infiltration.

Sheet For Air-Conditioning Load Estimate

Load Estimate for ..... Date.....
Address ..... City .....
Dimensions of space to be conditioned:
..... × ..... × ..... high = ... cu. ft.

N / W — E / S

Insert dimensions on sketch.
Indicate doors and windows on sketch.
Indicate wall, floor, and ceiling construction.
Space will be used for.....

	Sq. Ft. × Factor = B.t.u./hr.
North wall glass	..... × ..... = ...
North wall ..... × ..... = ... —glass	..... × ..... = ...
South wall glass (shaded)	..... × ..... = ...
South wall ..... × ..... = ... —glass	..... × ..... = ...
East wall glass (shaded)	..... × ..... = ...
East wall ..... × ..... = ... —glass	..... × ..... = ...
West wall glass (shaded)	..... × ..... = ...
West wall ..... × ..... = ... —glass	..... × ..... = ...
Roof skylights glass	..... × ..... = ...
Roof ..... × ..... = ... —glass	..... × ..... = ...
Ceiling ..... × ..... = ...	..... × ..... = ...
Floor ..... × ..... = ...	..... × ..... = ...

Note: No heat gain if floor is on ground or above a cool basement.

Sun effect, walls (figure only the wall having greatest sun exposure) and add the total amount estimated above for that wall ..... = ...

Sun effect, roof—add twice the roof load estimated above if conditioned space is directly below the roof or a hot attic = ...

Sun effect, glass—if windows are not shaded by awnings or venetian blinds, add about 5 times the estimated glass load above for the side having greatest sun exposure..... = ...

Heat of people—choose proper total factor—
No. ..... People × Factor ..... = ...

Ventilation and Infiltration:

No. people ..... × 300 B.t.u. for normal use
..... × 450 B.t.u. for offices = ...
..... × 600 B.t.u. for restaurants

Check ventilation by (Total cu. ft. of space) × 0.5..... = ...
and use larger of the two amounts.

Other heat gains—itemize:
..... = ...
..... = ...
..... = ...

Total heat gain in B.t.u. per hour..... = ...

Tons refrigeration required = total B.t.u./12,000..... = ...

PRICE OF EQUIPMENT

	Weight	Price
Condensing unit size	.....	.....
Evaporative condenser	.....	.....
Air conditioner	.....	.....
Thermal valve and connections	.....	.....
Thermostats and controls	.....	.....
Pipe covering	.....	.....
Water and drain connections	.....	.....
Electric wiring	.....	.....
Duct work and grilles	.....	.....
Duct work and conditioner insulation	.....	.....
Freight and cartage	.....	.....
Erection labor and travel expense	.....	.....
Service labor and materials	.....	.....
TOTAL PRICE	.....	.....

Office Conditioning Job Individually Controlled

PITTSBURGH—Flexibility and individual control feature the air-conditioning system installed by Standard Air Conditioning, Inc. in the offices of Plymouth Oil Co. in the Benedum Trees building here.

The installation consists of 13 selective room conditioners, 13 water removal tanks, a two-speed, 10-hp. refrigerating machine, a water-removal pump, and the necessary controls, explained J. N. Riley, assistant manager of Standard Air Conditioning.

Heat in each office is controlled by Powers valves, and the air conditioning as a whole is individually controlled for humidity, ventilation, and temperature.

Refrigerating machine using Freon is installed in a special sound-proof enclosure in one of the offices. Copper refrigerant, water, and drain lines run under moldings and below the floor. Dampers regulate fresh air intake from beneath the windows so that through each unit there can pass a maximum of 315 c.f.m. of air.

Outdoor and recirculated air goes through viscous cellular filters. A rheostat on each unit controls volume of air delivered.

Fin-type copper heating coils in the radiators connect with the central heating system of the building. Cooling is controlled from the central refrigeration plant, circulation being through pipes to each unit in the same manner as the heating.

Specially designed cooling coils provide a drying effect said to create a comfortable condition without too great a drop in temperature. Spray-type humidifiers are used.

New Stoker Service Firm

CHICAGO—The Stoker Maintenance Corp., Inc., has been established at 3422 Normal Ave., Chicago, by P. S. Wilbourne, R. E. Grello, and W. O. Lindquist.

New Spray Nozzle Line Has 'Parasol' Effect

CHICAGO—A new line of "Parasol" wide-angle spray nozzles intended for use in air-conditioning systems, air washers, brine sprayers, chemical processes, or wherever an exceptionally wide angle spray is required, has been placed on the market by Spraying Systems Co. here.

These nozzles provide a hollow-cone type of spray with uniform distribution, the company claims, and can be used to spray water, brine, oil, or other liquids with similar viscosities. Impact of spray is determined by pressure, capacity, spray angle, and distance from orifice, but the nozzle is not designed for use where considerable impact is required.

Contract Awarded For Cooling 12-Story Omaha Building

OMAHA, Neb.—Major Appliance Co. of Omaha has been awarded the contract for air conditioning of the 12-floor Farm Credit building.

Condensing Water Used To Irrigate Flowers

UPLANDS, Calif.—San Antonio Community Hospital here has succeeded in conserving its water supply and in effecting a substantial reduction in operating costs of its air-conditioning system by using the water from the system's condensing unit to irrigate flowers, shrubs, and other flora on the hospital grounds.

In this hospital, which has been highly rated because of increased safety in surgery, a special humidifier provides humidity control and more comfortable temperatures for surgical work. A relative humidity of 55% is continuously maintained in the operating room, and there is no recirculation of the filtered air.

In the laboratory, air conditioning has prevented evaporation of fluids in use and has checked contamination of cultures, according to technicians in charge of this work.

Doctors on the hospital staff report that air conditioning has afforded increased comfort for patients, especially in the obstetrical department and X-ray room, and that they themselves have been able to operate more efficiently.

11 Chicago Cooling Jobs Sold In December

CHICAGO—Eleven central-station type air-conditioning systems were sold or contracted for in the Chicago territory during December, according to reports compiled by Commonwealth Edison Co., utility company.

Five of the systems were for installation in theaters, and ranged in capacity from 30 to 60 tons. Two 15-ton systems were installed in general offices, and another 3-ton system went into a private office.

Systems of 25 and 30-ton capacities were installed in two of the city's restaurants, and the other installation, totaling 10 tons, went into a drug store on the city's North Side.

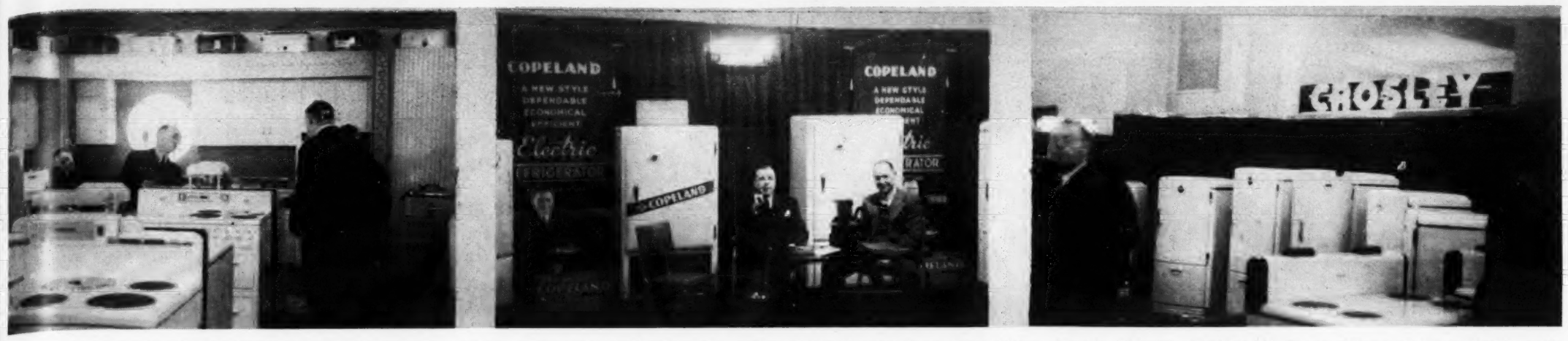
$600,000 Albuquerque Hotel To Be Air Conditioned

ALBUQUERQUE, N. M.—Carrier Engineering Co., Los Angeles, has been awarded the contract for air-conditioning equipment to be installed at the new Hilton hotel here.

To Cool 74 Railroad Cars

NEW YORK CITY—The Union Pacific Railroad has announced that it will spend $1,480,000 to air condition and modernize 74 cars.

Westinghouse, Copeland & Crosley Exhibits At Home Furnishings Show



Left: Prospects get a demonstration of what's new in electric ranges at Westinghouse's display at the Stevens home furnishings show in Chicago. Center: W. G. von Meyer and Ben Hyatt catch a minute's rest between callers at Copeland's booth. Right: Crosley's exhibit attracted more than its share of attention.

ASHVE Members To Hear Papers on Fuels, Heat Transfer, and Body Reactions

(Concluded from Page 1, Column 5)

morning will be followed by a welcome luncheon at the hotel, and informal entertainment will be provided Tuesday evening. Wednesday evening, Jan. 25, at the annual banquet and dance, E. Holt Gurney of Toronto will receive the Past President's emblem.

Technical sessions of the society begin Monday afternoon, Jan. 23, when "Frictional Resistance to the Flow of Air in Ducts" will be presented by F. C. Houghten, J. B. Schmieler, John Zalovcik, and Nicholas Ivanovic. "Air Conditioning in Industry" will be discussed by W. L. Fleisher, A. E. Stacey, Jr., F. C. Houghten, and Dr. M. B. Ferderber.

PROGRAM TUESDAY, JAN. 24

Tuesday morning, Jan. 24, papers will be presented on "Recent Advances in Physiological Knowledge and Their Bearings on Ventilating Practice," by C. E. A. Winslow; "Cardiac Output, Peripheral Blood Flow, and Blood Volume Changes in Normal Individuals Subjected to Varying Environmental Temperatures," by F. K. Hick, R. W. Keeton, Nathanial Glickman, and H. C. Wall; "The Role of the Extremities in the Dissipation of Heat from the Body in Various Atmospheric and Physiological Conditions," by Charles Sheard, Marvin M. D. Williams, Grade M. Roth, and Bayard T. Horton; "Skin Temperatures of the Extremities and Effective Temperature," by Charles Sheard, Marvin M. D. Williams, and Bayard T. Horton, and "Air Conditioning Requirements of an Operating Room," by F. C. Houghten, and Dr. W. Leigh Cook.

HEAT TRANSFER

The Tuesday afternoon meeting will be devoted to heat transfer, with papers on "Some Reflection and Radiant Characteristics of Aluminum," by C. S. Taylor and J. D. Edwards; "A study of the Heat Requirements of a Single Glazed Test House and a Double Glazed Test House," by M. L. Carr, R. A. Miller, Leighton Orr, and David Shore; "Heat Transfer in Storage Water Heaters," by D. W. Nelson and A. A. Rosenberg; and "Condensation of Moisture and Its Relation to Building Construction and Operation," by F. B. Rowley, A. B. Algren, and C. E. Lund.

Wednesday morning, Jan. 25, will be devoted to fuels, with discussions of "The Responsibility of A.S.H.V.E. Towards Solid Fuel Industry," by W. A. Danielson; "Selection of Solid Fuels from the Viewpoint of the Small Consumer," by P. Nicholls; "Small Stokers," by P. A. Mulcey and R. A. Sherman; "Improvements that are Needed in Heating Equipment," by T. H. Urdahl, and "Performance of Stoker-Fired and Hand-Fired Warm Air Furnaces in the Research Residence," by A. P. Kratz, S. Konzo, and R. B. Engdahl.

SMOKE ABATEMENT PROBLEM

Wednesday afternoon session will be concerned with smoke abatement problems including "Smoke Abatement—Where to Draw the Line," by H. B. Meller; "Smoke Producing Tendencies in Coals of Various Ranks," by H. J. Rose and F. P. Lasseter; and "Air Filter Performances as Affected by Low Rate of Feed, Various Types of Carbon, Dust Particles, Size, and Density," by F. B. Rowley and R. C. Jordan.

The final morning session on Thursday, Jan. 26, will include papers by J. S. Alford, J. E. Ryan, and F. O. Urban on "The Effect of Heat Storage and the Variation in Outdoor Temperature and Solar Intensity on the Heat Transfer Through Walls"; John Everetts, Jr. and J. C. Albright will present "The Determination and Practical Application of Weather Data in Design"; A. J. Rummel, F. E. Giesecke, W. H. Badgett and T. A. Moses will discuss "Reactions of Office Workers to Air Conditioning in South Texas."

Installation of new officers of the society will take place during the final session Jan. 26.

PITTSBURGH CHAPTER HOSTS

Members of the Pittsburgh chapter will be hosts at the meeting, with convention headquarters established on the seventeenth floor of the hotel. Committee on arrangements includes: John F. S. Collins, Jr., general chairman; Arthur McGonagle, honorary chairman; C. M. Humpherys, first vice chairman; Fabian C. McIntosh, second vice chairman; M. L. Carr, finance committee; T. F. Rockwell, publicity committee; D. W. Loucks, transportation committee; R. J. J. Tennant, inspection committee; P. A. Edwards, technical sessions committee; P. A. Edwards, technical sessions committee; A. F. Nass, attendance committee; Mrs. John F. S. Collins, Jr., ladies committee; R. B. Stanger, entertainment committee, E. C. Smyers, banquet committee; and J. Earl Frazier, reception committee.

RESEARCH MEN INVITED

The following chairmen of the Committee on Research have been invited to attend the meeting: George W. Barr, Villa Nova, Pa.; Perry West, Lexington, Ky.; J. Ervine Lyle, Syracuse, N. Y.; F. R. Still, New York; Thornton Lewis, New York; E. E. McNair, St. Petersburgh, Fla.; W. H. Driscoll, Syracuse, N. Y.; H. P. Gant, Glenmore, Pa.; S. R. Lewis, Chicago; L. A. Harding, Buffalo; F. B. Rowley, Minneapolis; C. V. Haynes, Philadelphia; G. L. Larson, Madison, Wis.; John Howatt, Chicago; A. P. Kratz, Urbana, Ill.; and W. A. Danielson, Louisville, Ky.

Official delegates will attend the meeting from each of the Society's 25 chapters throughout the country.

Carrier Shifts Staff As Boulware Quits Gen. Mgr. Post

(Concluded from Page 1, Column 3)

Mr. Boulware's position will not be filled, Mr. Lyle said. The three vice presidents will report directly to the president.

Mr. Murphy, vice president in charge of the central district of Carrier, becomes vice president in charge of marketing, and Mr. Bentley, vice president and head of the International division, becomes vice president in charge of finance. Because of Mr. Bentley's experience in the export and marine business, these departments will continue to report to him.

Mr. Ostling has been with General Motors Corp. since 1920, except from 1929 to 1935, when he reorganized the plant management and production of the United States Rubber Co., placing many of these plants on a profitable operating basis. Mr. Ostling, who attended Armour Technical Institute, also has had experience as a consulting engineer in the automotive field in foreign countries. In the Pontiac factories, he has been in charge of plant efficiencies, layout, and methods and coordination of engineering and manufacturing releases.

Mr. Bentley has been with Carrier Corp. for 17 years. Before elevation to his present position, he directed the complete export and marine operations in his post as vice president in charge of the International division. He attended the University of Alabama and Marion Institute of Alabama.

Following his graduation from Lehigh University in 1901, Mr. Murphy became associated with Dr. Carrier as an assistant in experimental work on dehumidification. In 1915 he was made vice president and manager of the Philadelphia office. Other posts he has held with Carrier include general sales manager and manager of the Newark, N. J. sales office, site of the first plant.

Dr. Willis H. Carrier, pioneer air-conditioning engineer and founder of the corporation, will continue to direct all engineering and research. Dr. Carrier is chairman of the board of directors.

To Manage Appliance Store

DES MOINES, Iowa—George E. McMillen has been appointed sales manager for Wilkins Appliance Co. here, James W. Wilkins, owner and operator, announces. Five city salesmen recently have been added.

Crosley 'Reado' Shown To Distributors

(Concluded from Page 1, Column 4)

was the Crosley Reado, a radio attachment which receives printed broadcasts and pictures over the air. This product is the first of its kind to be introduced at a popular price for public use.

The convention was opened by Thomas W. Berger, Crosley's general sales manager, who introduced Powel Crosley, Jr., president of the company. Outlining plans for 1939, Mr. Crosley stated that the company would stage one of its most aggressive merchandising campaigns.

He expressed utmost optimism over business prospects for the year, explaining that the steady rise of the business curve since last summer indicated a prosperous year generally.

"We feel that this is one of those years when we are going to forge ahead," he said. "We are spending money in anticipation of the business we expect to get. Our advertising expenditures have been substantially increased. We feel that now is the time to apply the right kind of sales effort to make sales volume pile up."

Other speakers on the program included Powel Crosley, III, and C. R. D'Olive, vice presidents.

Poor's Forecasts Increased Appliance Sales In '39

NEW YORK CITY — Increased sales of consumers' goods, such as radios, refrigerators, washing machines, and other electrical appliances for the home, are forecast for 1939 by Poor's Industry & Investment Surveys.

Greater industrial activity, increasing consumption of electrical power, and rising consumer buying power greatly improve 1939 earning prospects for electrical equipment dealers. New orders for electrical goods have strengthened since early in 1938 and the outlook is favorable for a continuance of the uptrend.

"Declining electric rates act as a stimulant for equipment sales," the survey points out. "The average domestic rate per kilowatt hour was reduced from 8.7 cents in 1913 to 4.27 cents during the 12 months ended Sept. 30, 1938. The latter figure represented a 4.3% decline from the average rate for the like 1936-37 period.

"In order to offset declining rates, utility companies will endeavor to expand their output and will be compelled to greater appliance sales efforts."

Norge Lowers Prices On 1939 Lines

(Concluded from Page 1, Column 2)

by mechanical improvements, new styling, and a generally lower scale of prices, it was said.

Company executives who addressed the distributors included Howard E. Blood, president of Norge division and executive vice president of Borg-Warner Corp.; C. D. Donaven, vice president and general manager; M. G. O'Harra, vice president in charge of sales; James A. Sterling, advertising and sales promotion manager; E. L. Frohlich, eastern sales manager; J. H. Tenney, western sales manager; and H. H. Whittingham, vice president in charge of product engineering.

Representing Borg-Warner at the meeting were Charles S. Davis, president; George W. Borg, chairman of the board; and other executives.

First of a series of zone meetings to introduce the line to the selling force opened Jan. 12 in Detroit, to be followed by similar meetings in all of the larger cities. Among the sales tools provided by Norge this year is a complete mobile dealer show, in which a motion picture and phonograph records are used to present the line.

$20,000 Fire Destroys Home of H. W. Burritt

DETROIT—Fire of undetermined origin Sunday morning destroyed the Grosse Pointe Shores home of Henry W. Burritt, vice president in charge of sales for the Kelvinator division of Nash-Kelvinator Corp. Damage was estimated unofficially at $20,000.

Mr. and Mrs. Burritt and their 10-year-old daughter, Barbara, were aroused by the odor of smoke, but were unable to determine the location of the fire until it broke through a wall. The 15-room frame house was richly furnished and contained many priceless heirlooms.

For more than four hours the firemen battled the flames, which also threatened two houses nearby. Two members of the Grosse Pointe Shores fire department were injured.

Landers, Frary & Clark Declares Dividend

NEW BRITAIN, Conn. — Regular quarterly dividend of 37½ cents a share on the common stock, payable Dec. 27 to stockholders as of Dec. 15, has been declared by Landers, Frary & Clark.

Commercial Service

Operation of '1928 Liquid Hook-Up' Given To Aid in Servicing Installations

Editor's Note: Described in this article is the "1928 Liquid Hook-Up" system of jar enclosure refrigeration for soda fountains, as it applies to both two-boiler and three-boiler installations. In addition to operation of the system, service points also are outlined.

This is a continuation of the series by Messrs. Black and Seitz on the servicing of soda fountains, ice cream cabinets, counter-type ice cream freezers, and frosted food cabinets, which AIR CONDITIONING & REFRIGERATION NEWS is publishing in weekly instalments.

By Arch Black and Dean C. Seitz

During 1928 a soda fountain manufacturer placed on the market a system of jar enclosure refrigeration known as the "1928 Liquid Hook-Up." Primary object of this hook-up is to provide a positive means of cooling the jar enclosure of the fountain. At the same time the soda and water line from the water bath compartment to the draught arm will pass through a refrigerated enclosure in order to give the water and soda a final cooling.

Fig. 1 illustrates this hook-up as applied to a two-boiler fountain. Boiler No. 1 is a water bath boiler, and boiler No. 2 the ice cream brine tank boiler. In tracing the hook-up it will be noticed that the suction line connections are standard, that is, the suction gas from the ice cream boiler returns directly to the condensing unit, whereas the suction gas from the water bath boiler (No. 1) can only return to the condensing unit when its pressure is high enough to open the pressure regulating valve (F.)

High pressure liquid sulphur dioxide from the condenser returns to the fountain through the ¼-inch line (M) which is attached to the liquid line valve (A) on the water bath boiler (No. 1). This is the only connection between the receiver and the two boilers.

It will be noted that the water bath boiler (No. 1) is fitted with three valves in place of the customary two. The third valve, labeled "B," is tapped into the boiler below the liquid level of the sulphur dioxide.

Fig. 2 illustrates the internal construction of this third connection. A ¼-inch line runs from valve "B" through the bottle storage compartment, through the syrup jar enclosure between points "N" and "X," through conduit under the top tappings of the creamer unit to the ice cream boiler No. 2. At this point it is attached to the liquid line valve "D." This ¼-inch line acts as an evaporator during operating conditions.

Valve "D" is special in that all the customary screens are omitted and the openings through the float valve are enlarged from the customary 52 drill hole to a hole 3/32 of an inch in diameter.

Operation of the System

In order to understand the operation of this system, let us assume that the condensing unit has started in operation. The pressure in both the water bath boiler (No. 1) and the ice cream boiler (No. 2) drops as the condensing unit removes the evaporated sulphur dioxide.

This reduction in pressure continues in both boilers until the pressure has reached the point at which the pressure regulating valve "F" closes (assume 2 lbs. per square inch SO_2). At this time no further gas will be removed from boiler No. 1, however, the condensing unit will continue to remove gas from boiler No. 2. As a result the pressure in boiler No. 2 will be reduced below the pressure maintained in boiler No. 1.

It is this difference in pressure between the water bath boiler No. 1 and ice cream boiler No. 2 that forces the liquid refrigerant to flow into boiler No. 2. The removal of sulphur dioxide through the valve "B" from boiler No. 1 into boiler No. 2 drops the liquid level in boiler No. 1, thereby permitting its float valve to open and admit sufficient refrigerant from the high pressure line (M) to again close the float.

Ice cream boiler No. 2 operates as a standard boiler as long as liquid refrigerant is present at valve "D." Whenever there is no liquid at "D," the float valve will drop permitting low pressure liquid refrigerant to enter from the water bath boiler No. 1. It must be kept in mind that the liquid passing through the copper tube in the jar enclosure connecting the two boilers is low pressure liquid, which will evaporate and absorb heat during its passage through the jar enclosure.

In order to provide the maximum amount of refrigeration for the jar enclosure, it is filled with water to a depth of approximately 1½ inches. The line leading through the jar enclosure between points "N" and "X" is submerged in this water. Since the liquid refrigerant passing through this line is at a pressure of approximately 2 lbs. per square inch, an ice formation will be formed in the water bath of the jar enclosure.

By permitting the bottom end of the syrup jar to extend into this ice formation, and by running the blocked-in leader line from the water bath compartment to the draught arm through this refrigerated bath, both cold syrup and cold water can be obtained.

As was pointed out above, the SO_2 of the sweet water bath boiler No. 1 is vaporizing at a low enough pressure (2 lbs. per square inch) to freeze ice on this boiler. After cooling the small water bath in the jar enclosure to 32° F., this low pressure sulphur dioxide continues to remove heat from the water and freezes ice on the tube.

As this ice continues to build up, it acts as an insulator so that the sulphur dioxide flows through the line from "M" to "X" without being vaporized, and thereby supplies the needs of the ice cream boiler No. 2. During that portion of the cycle, when ice is forming on the jar enclosure line, practically all of the sulphur dioxide is vaporized before it reaches valve "B."

The amount of sulphur dioxide flowing in the line from "N" to "X" would be able to pass through an ordinary float valve if the SO_2 were all in a liquid state. However, during a considerable portion of the cycle, the refrigerant passing through the line is in a gaseous state and the small opening of the standard float would restrict the flow to such an extent that the condensing unit would reach its cut-out point before the cooling was finished. It is for this reason that the float valve hole is enlarged to 3/32 of an inch and the screen at valve "D" is removed. The screen at valve "B" however should remain in place.

Three-Boiler Hook-Up

Fig. 3 illustrates a similar hook-up for a three-boiler installation. Boilers Nos. 1 and 2 are exactly the same as explained above under the hook-up for two boilers, whereas boiler No. 3 may be either a second water bath boiler or any other individual boiler connected in multiple with a two-boiler fountain on the same condensing unit.

If boiler No. 3 is standard, its supply of sulphur dioxide is obtained directly from the receiver of the condensing unit through the liquid line "O." The refrigerant vapor is returned to the condensing unit through its own regulating valve (J) which permits the temperature control of evaporator boiler No. 3 independently of the other two.

Service Points

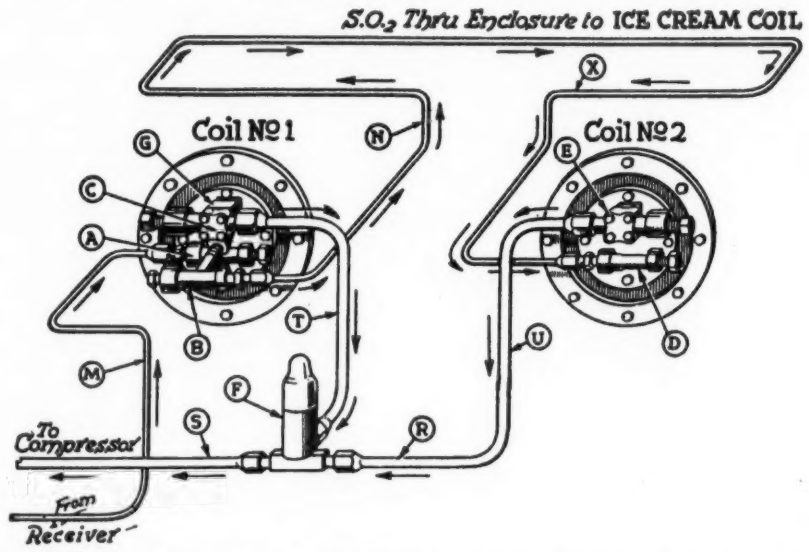
None of the parts which are special on this hook-up (as illustrated in Fig. 2) are carried in stock by the condensing unit manufacturers or by the boiler manufacturers. They must be ordered directly from the Liquid Carbonic Corp. at Chicago, or from that firm's nearest branch.

This hook-up can only be operated from one condensing unit. The cut-in point of the low pressure switch should be approximately 5 to 6 lbs. and the cut-out point between 15 and 17 inches of vacuum.

The proper setting of the pressure regulating valve "F" is very important. It should be set as high as possible and still maintain a satisfactory ice formation. Normally this pressure will be between 2 and 3 lbs.

(*Concluded on Page 17, Column 1*)

Fig. 1—Two-Boiler Liquid Carbonic Fountain



The "1928 Liquid Hook-Up" as applied to a two-boiler fountain. No. 1 is a water bath boiler, and No. 2 the ice cream tank boiler.

Special Connection

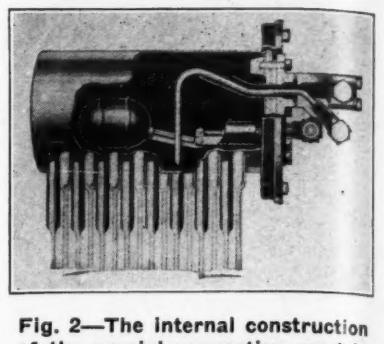


Fig. 2—The internal construction of the special connection used in the coil No. 1 in Figs. 1 and 3.

Service Operations on '1928 Liquid Hook-Up'

(Concluded from Page 16, Column 5)

per square inch. If the pressure in the water bath boiler is permitted to become too low, there is danger of not only freezing the water cooling coils and cylinders, but also of not supplying liquid refrigerant rapidly enough for the requirements of the ice cream boiler. Occasionally it is necessary to increase the tension of the lower springs of the pressure control valve by inserting a split washer (approximately 1/16 inch thick) between the yolk and the lower spring.

FILLING JAR ENCLOSURE

The jar enclosure should be filled with water up to the overflow holes in the standpipe. This depth is approximately 1½ inches. Always make certain that the standpipe has been screwed in place so tightly that the water will not leak out of the jar enclosure compartment.

The customer should be instructed to pre-cool the syrup before it is placed in the syrup jar of the enclosure. The fountain has been designed to keep syrup cold when it is placed in the jar in a cool condition.

The float valve in the ice cream boiler will not hold tightly against the full condensing pressure. The float ball itself is standard but with the enlarged hole it will not hold tightly against pressures above 15 to 20 lbs. Pressures above 2 or 3 lbs. should never be encountered at the liquid line valve of the ice cream boiler. If the service engineer believes that the ice cream boiler float valve is leaking, he should first make certain that the pressure in the water bath boiler is down to the normal 2 or 3 lbs.

HISSING NOISE

The ice cream boiler will be short of liquid refrigerant until the cooling in the jar enclosure is practically completed. After liquid refrigerant starts to pass through the jar enclosure cooling line, some of the liquid will be vaporized in the enclosure. This vaporized refrigerant will produce a hissing noise at the ice cream boiler float valve. Many service engineers use this hissing noise as their means of determining a leaking float valve or a shortage of refrigerant.

With this hook-up a hissing noise will be perfectly normal during a portion of the cycle and consequently a testing for a shortage of sulphur dioxide must be done at the receiver. The installation of a liquid line sight glass will assist materially in determining this point. If the receiver shows an excess of sulphur dioxide, make certain that both boilers are completely full of refrigerant before purging the system.

Changing Float Valves

To change the float valve in the ice cream brine tank, the operating procedure is as follows: (See Fig. 1.)

Close valve "B" on the water bath boiler.

Close valve "C" on the water bath boiler. Block in the condensing unit switch and pump down ice cream boiler in usual manner.

Break the vacuum by opening valve "B" for an instant.

Pull electric switch at condensing unit.

The ice cream boiler float valve is now ready to be changed in the same manner as any standard float. When replacing the float, make certain that it is done with another float valve having the enlarged hole. (These special floats must be ordered from the manufacturer or branch.)

To change the float valve of the water bath boiler, the procedure is as follows: (See Fig. 1.)

Close valve "B" on the water bath boiler and allow the condensing unit to operate a few minutes to evacuate the line between "N" and "X." Close valves "D" and "E" on the ice cream boiler.

Close the liquid line valve at the condensing unit.

Block in the condensing unit switch and pump down the water bath boiler in the usual manner.

Break the vacuum by opening the liquid line valve at the condensing unit for an instant.

Change the float valve in the usual manner, except that the valves "A," "B," and "C" are left in place on the float until it is removed.

With the float out of the boiler, straighten the tube attached to valve "B" and remove all the valves from the flange plate.

Attach the valves to the new float valve and then the tube of valve "B" back into position.

Insert the float valve into the boiler in the usual manner.

The float valve assembly is standard for the water bath boiler since the valve "B" is attached externally and a tube does not necessitate any change in the construction of the float valve.

Receivership Sought For Ottenheimer

BALTIMORE—An application for the appointment of a receiver for the firm of Ottenheimer Bros., Inc., manufacturer of commercial refrigerators, was filed Jan. 10 in the Circuit Court of Baltimore by the American Ice Co.

The petitioner alleged that it was a creditor of the defendant in the sum of $1,067, and that the defendant was insolvent in that its liabilities exceed its total assets. An order was issued by the court, directing the defendant to show cause by Jan. 20 why a receiver should not be appointed.

This action is separate from an earlier application filed by certain stockholders of Ottenheimer on Dec. 17, 1938, and to which the company had filed a general demurrer. Latter action is awaiting further hearings.

Wolfe Completes 15th Year In Commercial Field

HARRISBURG, Pa.—Wolfe Engineering & Sales Co. is completing its fifteenth year in the commercial refrigeration business in Harrisburg. A new building has been built to house the factory and display rooms.

The firm carries a complete stock of coils, insulation, doors, refrigerators, cases, freezers, cabinets, fountains, water savers, Diesel engines, water and milk coolers, pumps, and motors.

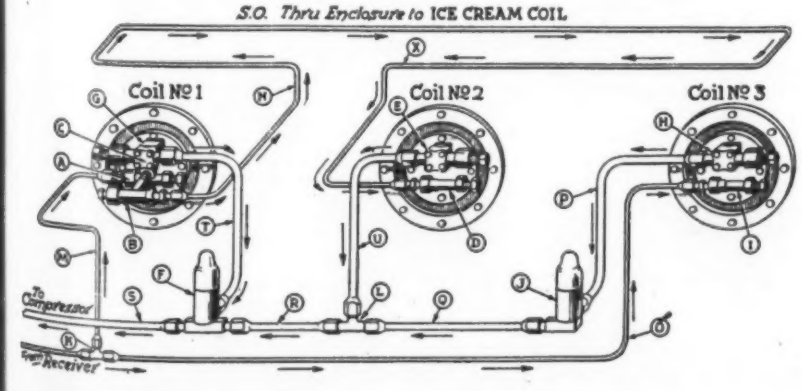
"I feel that our steady growth in the field of commercial refrigeration is due to the fact that our interest does not end when the sale is made," said Mr. Wolfe, president of the organization. "We have adequate facilities for servicing and maintaining any equipment that we sell. Purchases made here are never orphans."

Hart Glass Co. Bought By Armstrong Cork

LANCASTER, Pa.—Purchase of Hart Glass Mfg. Co., Dunkirk, Ind., which employs about 500 persons and specializes in the manufacture of glass containers, has been announced by Armstrong Cork Co. here.

Present management of the Hart company will remain intact, according to Armstrong officials, but it was announced that sales forces of the two organizations will be merged "as soon as practicable."

Fig. 3—Three-Evaporator Hook-Up



QUESTIONS

Manual C-1 Has Data On Freon

No. 3350 (Service Man, Indiana)—"Will you kindly tell me the address of the company that makes Freon gas so that I may get the working action of the gas or liquid, pressure at different room temperatures, best ways to find a leak in the refrigerator system."

Answer: Freon refrigerant is manufactured by the Kinetic Chemicals Co., Inc., Wilmington, Del.

If you wish information about Freon and for that matter, on all refrigerants, procure a copy of Manual C-1 in the series of Master Service Manuals on Commercial Refrigeration which we publish.

This gives the data on the properties of refrigerants, including head pressures, suction pressures, tells how to transfer refrigerants, and explains the use of dryers.

Address of 'Cool Stirs' Manufacturer

No. 3351 (Exporter, New York)—"In your issue of Aug. 24 we noticed an advertisement about Cavalier 'Cool Stirs.' We would like to get in touch with this manufacturer, and would thank you to let us know their name and address."

Answer: Cavalier Glass Co., Inc., 3706 36th St., Long Island City, L. I., N. Y.

Replacement Sought For Mechanacold

No. 3352 (Parts Jobber, Ohio)—"A customer of ours has a Mechanacold compressor, with a ¾-inch shaft. He is trying to obtain a replacement seal unit for this compressor.

"Can you give us any information as to who manufactured this unit, or where we can obtain the replacement seal for it."

Answer: The 1936 Air Conditioning & Refrigeration Specifications Book states that the Mechana Kold Corp. no longer manufactures this unit. Manufacturing rights have been acquired by the Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago, Ill. You might contact them.

Coin Meter Maker

No. 3353 (Service Company, New York)—"Some time ago we noticed in your weekly paper under merchandise for sale some concern or people selling coin meters. We would appreciate it very much if you would send us the name and address of same as we are in need of such meters."

Answer: We carried some advertising quite a while ago on coin meters manufactured by the International Register Co., 15 S. Throop St., Chicago, Ill.

Detroit Code Typical

No. 3354 (City Electrical Inspector, Ohio)—"We would appreciate receiving a copy of all city ordinances pertaining to refrigeration from the various cities in the United States."

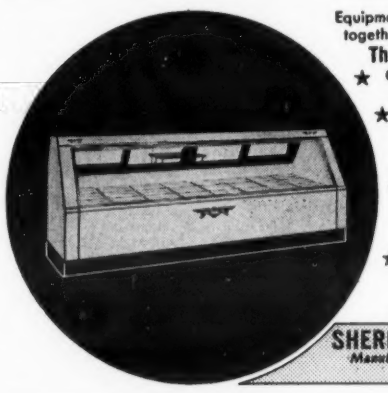
Answer: We do not have copies of the various city ordinances pertaining to refrigeration. However, in the Sept. 7, 1938 issue of Air Conditioning & Refrigeration News, we published a copy of the proposed mechanical refrigeration safety code of the City of Detroit, prepared under the sponsorship of the Department of Safety Engineering of Detroit.

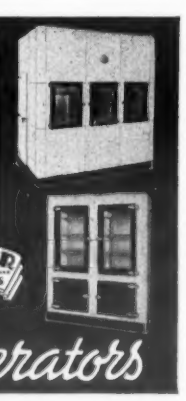
This code incorporates the latest thinking on municipal refrigeration safety codes, and the price for a single copy of this issue is 20 cents.

THE BUYER'S GUIDE

It Takes a Lot of Hard Work To Put Up a Refrigeration Exhibit

Exhibits such as those shown at the First All-Industry Refrigeration and Air Conditioning Exhibition aren't born full-blown. They require careful advance planning and design, and somebody has to be on hand early to put them up. Here are a few snapshots of men at work in shirtsleeves early Sunday morning getting their exhibits in shape. (1) A delegation was on hand from Peerless to get their complex displays into position. (2) O. F. Nelson and Frank Riley did all the work on their exhibit themselves. (3) A group of neighboring exhibitors pauses to discuss the Chicago unions. The man with shirttail out is Ken Newcum, Superior Valve & Fittings Co. (4) Mr. Newcum (left) does some heavy lifting. (5, 6, 7, and 8) The News exhibit goes up.





THE COLD CANVASS

By B. T. Umor

(Concluded from Page 1, Column 1)

Our Charming Author

Chairman of the Ladies Entertainment was none other than Mrs. Mel Knight, wife of the popular Peerless man who worked so hard and effectively as chairman of the exhibition committee.

Mrs. Knight, readers of the NEWS will recall with pleasure, was the author of those scintillating articles on Mexico which appeared in the last two issues of the NEWS.

And boys, she's just as charming and witty as her letters. Together with Mrs. W. A. Honeychurch, Mrs. Hal Clay, and Mrs. Irving Alter—all young and pretty and lively—she formed a gay foursome which made Opening Day a bright affair.

* * *

Candid Camera Sharps

R. M. Van Vleet, manager of refrigeration sales for Cutler-Hammer, joined the ranks of refrigeration industry candid camera addicts at the All-Industry Exhibition. Mr. Van Vleet uses a Leica.

Herman Goldberg, Chicago jobber famous for his amateur movies, also has moved over to the miniature-camera group. So has Irving Alter, who was using an Eastman Bantam Special.

John Wyllie of Temprite and Editor Taubeneck of the NEWS were there with their veteran Contax minicams, and Austin Jones was much in evidence at the banquet with his Leica.

* * *

Slicker

Answering a loud buzz at her door one morning, a Chicago housewife discovered four truckers panting on the piazza, carrying a huge electric refrigerator. "Here's your refrigerator, ma'm," they puffed. "Just sign here."

"But I didn't order a refrigerator," she protested. Groaning, they carried the heavy box to the truck and drove away.

This was the beginning of a four months trek to the woman's door of delivery men carrying everything from profane parrots to oil paintings. Every jangle of the bell brought some unwanted debris, and further unraveled her nerves.

After a complaint to the police, it was discovered that the whole thing was a racket. A smooth fellow had been ordering merchandise to be delivered to her address C.O.D. After ordering he would leave the store, only to return immediately.

"My wife," he would explain, "who was waiting in the car outside, has driven away and she has my money. Could you let me have a dollar or so to get home on?"

The beaming dealer, thinking of the nice order, usually peeled off $5 to start the swindeler moving, the merchandise going, and the doorbell ringing.

So beware of smoothies trying to "ring the bell" with a fake C.O.D. refrigerator order, for that bell may have a sour note for your and your customers.

* * *

And then there's the tale about the generous appliance manufacturer who sent a quantity of washing machines to a woman's reformatory with a card reading "Wring Out Wild Belles."

Sears Plans To Adopt Annual Wage

EVANSVILLE, Ind.—Sears, Roebuck & Co. will put into effect a plan which provides a guaranteed annual wage for all employes who are retained throughout the year, Clarence Caldwell, personnel director, said in an address at a meeting of local business men. Mr. Caldwell pointed out that personnel relations have lagged behind the scientific developments in American industry, greatly to the detriment of beneficial employe-employer relationships.

The guaranteed annual wage plan, which is a result of a 10-year study of employe problems conducted by the company, will be put into effect in all Sears, Roebuck & Co. stores by July of this year, Mr. Caldwell declared.

WORKERS BUY STOCK

"Sears today employs 35,000 people for whom profit-sharing funds and pension plans are maintained," he explained. "This employe benefit program was introduced 21 years ago. Since that time employes have accumulated a half-million dollars worth of Sears stock. They are allowed to invest up to $250 a year out of their earnings in this stock. The investment is supervised in order that it is made at a favorable market time for the employes.

"Our company also has such benefits as paid vacations, sick allowances, and severance pay. Such practices are more or less common in industry today. Sears also has long practiced the policy of promotion from within the ranks of the company."

PROMOTE FROM RANKS

Examples of company executives who have been promoted from the ranks were cited by Mr. Caldwell, who stated that "in the last seven years we have never gone outside our organization to hire a man for a job worth $5,000 a year or more."

As a result of his study of employe relationships, he said, he has arrived at the conclusion that most of the labor agitation in recent years has been justified, but added that he does not agree with the methods used by organized labor. He expressed sympathy for the problems of the employe in an insecure position.

3 Low-Priced Units In Gibson Line; Electric Ranges Are Added

GREENVILLE, Mich. — A new five-model line of electric ranges and three new low-priced 6-cu. ft. electric refrigerators were introduced to the national distributing organization of Gibson Electric Refrigerator Corp.

The three refrigerators in the so-called "Grenadier" line retail at $99.95, $119.95, and $139.50. The lower priced models have conventional evaporators, while the other is equipped with the "Freez'r Shelf," long-time Gibson feature. It was announced that an advertising campaign stressing "package promotions" and featuring the $99.95 model as a traffic builder will start in March in 63 metropolitan newspapers.

PRICES ANNOUNCED

Prices for the other refrigerator lines also were announced. Models in the "Superior" line list from $109.95 to $189.95, while prices of the "Supreme" units vary from $194.95 to $229.95.

The new Gibson ranges were designed by E. A. Rutenbar, whose experience in the development of electric cooking appliances goes back to 1912 and includes a period of employment with Norge Corp. List prices of these ranges run from $119.95 to $169.95 for the three 39-inch models and from $189.95 to $279.50 for the two 42-inch models.

NEW RANGE DIVISION

Harry W. Lippert, formerly with the Norge organization, has been engaged as Gibson's range specialist. From his headquarters at Greenville, Mr. Lippert will supervise the company's range activities throughout the country. Jack Tepper has been named southwest district manager, with Memphis as headquarters, to replace Jack Helliwell.

Some 150 men, representing 65 distributorships from coast to coast, attended the meeting. Speakers included Charles J. Gibson, president; L. W. Hamper, vice president; F. E. Basler, sales manager; and J. L. Stevens, sales production director, all of Greenville, and W. W. Garrison, head of the Chicago agency which handles Gibson advertising.

General Electric Appoints 3 Vice Presidents

NEW YORK CITY—R. M. Alvord, J. E. N. Hume, and A. S. Moody have been appointed commercial vice presidents of General Electric Co.

Mr. Alvord is manager of General Electric's Pacific district, consisting of California, Arizona, and western Nevada, a post he assumed in 1936; Mr. Hume has been manager of the industrial department of G-E since 1935; and Mr. Moody has been manager of the northwest district since 1936, prior to which he was manager of the northwest territory.

Foreign News

Australian Refrigerating Engineers Hold Annual Dinner Meeting

SYDNEY, Australia—Annual dinner of the Institute of Refrigerating Engineers, (Australian counterpart of the American Society of Refrigerating Engineers), was held in the Kingfisher Cafe here recently with an approximate attendance of 120 institute members and guests.

Mr. Sherwood, vice president of the organization, expressed the Institute's gratitude for the help given by the State government at the group's congress held last summer, and said he hoped that the Federal government would be able to cooperate in 1940 by sending a representative engineer from the Institute to the scheduled World Congress in Tokyo, Japan.

PLEDGES COOPERATION

J. A. Perkins, of the Australian federal parliament, responded to Mr. Sherwood's talk, and added that he would do his best to fulfill the latter's request concerning the Tokyo meeting.

The remarkable work done by refrigerating engineers and the important part that refrigeration plays in the preservation of national health by proper preservation of foods were lauded by Mr. Richardson on behalf of the premier and the State government.

Mr. Taylor, Commissioner of New Zealand, proposed a toast to the Institute on behalf of the New Zealand association, and expressed his government's gratitude to refrigeration engineers for making possible the export of perishable goods which contributes largely to the economic welfare of the dominion.

Appreciation of the work of lecturers who periodically address the Institute to aid in the education of members in various side lines of the industry was expressed by Mr. Carpenter.

HELP FOR INSTITUTE

For the lecturers, Mr. Mace said he was sure they were pleased to help the Institute by telling of developments overseas, and would be glad to assist in the future.

Mr. Lawson, member of the Institute of Mechanical Engineers, said that he would like to see an amalgamation of the two associations.

President Telfer of the refrigerating engineers' group was honored for his services during the past year. Mr. Telfer also expressed a desire that unity between the Institute and other similar bodies in different fields would be possible in the near future.

New Zealand, McAlpine Forms Parts Division

AUCKLAND, New Zealand—James S. McAlpine, Ltd., one of the oldest refrigeration engineering companies here, has formed a new department to deal exclusively with replacement parts and materials. This will operate as Refrigeration Specialties Division, James S. McAlpine, Ltd.

Home office and main warehouse will be located with the parent company at Emily Place, Auckland, but salesmen and agents will cover the whole of the New Zealand territory.

R. W. McKenzie, previously manager of Refrigeration Supplies, Ltd., Wellington, becomes manager of the new department which will operate independently from the parent company. The policy of the new organization will be purely as jobbers along N.R.S.A. lines, stocking and selling parts, equipment, and materials to the whole of the New Zealand refrigeration, air-conditioning, heating, and ventilating trades. A specialized feature of the new division will be a complete line of beer-cooling supplies.

McAlpines at present represent or distribute the products of Fr. Sauter A.G. (Switzerland); Cornelius Co.; Temprite Products Corp.; Tecumseh Products Co.; Dean & Wood (England). In addition, complete stocks are held of Penn, Ranco, Fedders, Detroit, and other standard equipment lines.

Refrigerator Market in East Indies Improves

BATAVIA, Java, N. E. I.—There is a good market in the Netherlands East Indies for electric refrigerators, demand having increased greatly in the last few years, reports U. S. Trade Commissioner Donald W. Smith.

"American manufacturers supply almost the total demand," Mr. Smith states. "Imports from the United States amounted, during 1937, to 2,056 units, out of total imports of 2,105 units.

"The foregoing figures cover imports of electric refrigerators, water coolers, and room coolers, but arrivals of both the latter are so limited that for all practical purposes the import statistics quoted may be taken to represent electric refrigerator imports.

"Air-conditioning equipment also is beginning to gain a foothold in this territory. No figures are as yet available to show the exact demand."

German Co. To Resume Interest Payments On Debentures

NEW YORK CITY—Siemens & Halske A.G., a leading German manufacturer of electrical appliances and equipment, has given American investors formal notice of its willingness to resume interest payments in dollars on $14,000,000 outstanding participating debentures.

It is alleged that, as the result of private negotiations, more than 87% of the holders of the debentures already have accepted the offer, which calls for reduction of interest to a fixed rate of 4½% annually from April 1, 1939, to April 1, 1951. Original terms of the issue provide for a minimum interest rate of 6%.

German foreign exchange restrictions which have made it impossible for the company to transfer funds for dollar payments during recent years, will be lifted if the offer is accepted, company officials announced.

A somewhat similar offer to resume interest payments on Siemens & Halske and Siemens-Schuckertwerke 6½% 25-year sinking fund debentures at a 3¼% annual rate recently was made public.

Rationing of Imports To New Zealand Forecast

NEW YORK CITY—Import and export control has been established by the New Zealand government, and indications are that imports into New Zealand will be rationed, foreign lines considerably more than British, stated J. Russell Hancock, refrigeration manufacturers representative of Wellington, New Zealand, just before he sailed for England after a tour of United States refrigeration and air-conditioning manufacturers.

"New Zealand recently reelected its labor government," Mr. Hancock explained, "and there has been a considerable drift of New Zealand capital for investment in other countries. This new measure is no doubt largely designed to stop the escape of capital.

"The rationing of imports is almost certainly related to an intensive local manufacturing program which I believe is to be undertaken.

"I should say the immediate effect of this measure will be a reduction of American exports to New Zealand. I am sure that exporters can ship orders that they have in hand or may receive, with confidence that payment will be made as promptly as ever."

Represents Swiss Firm

Dr. Erich Stern, representative of Fr. Sauter, Ltd., Basle, Switzerland, manufacturer of refrigeration controls, makes his headquarters at 2, Rue de Longpont, Neuilly-sur-Seine, France. The above picture was taken as he left the office of the NEWS at the time of his visit to the United States last summer.

Air-Conditioned Theater Under Way In Malaya

KLANG, Selanger, British Malaya—A new air-conditioned theater is being constructed here by Chinese interests, it was announced recently in the local press. Reports from the office of the American trade commissioner in Singapore indicate that the building, which will have a seating capacity of 600, will be one of the most modern in the section.

$44,000 Cooling Plant For Danish Theater

COPENHAGEN, Denmark — Two air-conditioning plants built by Brodrene Gram A/S, Vojens, Denmark, will be installed in the new Copenhagen radio center at a total cost of $44,000, reports the American commercial attache here.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, $2.00, additional words four cents each. Three consecutive insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

MANUFACTURER of refrigerator display cases in the Pittsburgh area desires to fill position of sales manager. Sales are made through dealer organizations operating in Maryland, Pennsylvania, Ohio and West Virginia. Person must be capable of assisting dealers in closing sales. Give details, experience, contacts and remuneration expected. Box 1105, Air Conditioning & Refrigeration News.

VALVE DESIGN Engineer: Capable of guiding development of solenoid valves and other types for commercial refrigeration and air conditioning. Must have current background in valves, covering design. Knowledge of market and competitive conditions desirable. Please do not answer this ad unless you have these definite qualifications. Responsible manufacturer entering this field offers unusual opportunity. State age, salary and experience. Please be brief and to the point. Our own men know of this advertisement. Box 1110, Air Conditioning & Refrigeration News.

YOUNG SALES Engineer with foreign trade background and knowledge Spanish, French. Familiar with commercial refrigeration and able to make own proposals. Also merchandising household refrigerators for well known export organization, New York, with possibilities travel later. Reasonable salary to start with good prospects. Write giving age, full particulars, salary expected. Box 1114, Air Conditioning & Refrigeration News.

POSITIONS WANTED

EXECUTIVE SALES position. Employed but desire change. Eleven years' experience merchandising major and small appliances in northwest, southwest and central west. Married, 40, college graduate. Capable of contacting distributors and dealers. Sales education and promotion experience. Can furnish bond. Full record including references and accomplishments to interested manufacturer or distributor. Box 1104, Air Conditioning & Refrigeration News.

GRADUATE of Refrigeration & Air Conditioning Institute desires position with contractor or dealer in eastern U. S. installing air conditioning equipment. Six years' electrical experience. A. B. physics, mathematics, engineering drawing. At present employed, electrician, including servicing commercial refrigeration machines. Married. Excellent references. Box 1111, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

COMMERCIAL TRAILER for sale, equipped with electric brakes, fitted up for complete jobber's display. Perfect condition. All steel construction. THE F. H. LANGSENKAMP CO., 229 E. South St., Indianapolis.

DEALERS AND SERVICEMEN—Offering Kelvinators, General Electrics, Westinghouses, Frigidaires, as is, as low as $8.00 each, guaranteed fully equipped. Frigidaire compressor units, all sizes, guaranteed in perfect condition. We have brand new boxes, all makes, at below dealers' prices. Write for prices! LANDOR WAREHOUSE, INC., 53 East 10th Street, New York City.

REPAIR SERVICE

GENERAL ELECTRIC and Westinghouse hermetic units rebuilt. Guaranteed unconditionally for one year and returned to you finished like new. Units are entirely disassembled in our large modern shop, tested through every step of production during rebuilding with the most complete test equipment for accurate work, then subjected to exhaustive running tests under actual operating conditions. Each unit measures to exacting standards after rebuilding. Prices $30.00 on General Electric DR-1, DR-2, and Westinghouse; $35.00 on General Electric DR-3. Quotations furnished on other models. Quick service — guaranteed work. REFRIGERATION MAINTENANCE CORP., 321-27 East Grand Ave., Chicago.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

DOMESTIC CONTROLS repaired: Ranco pencil $1.75, Ranco box $2.00, General Electric $2.00, Tag $2.00, Cutler-Hammer $2.00, Penn $2.00, Bishop Babcock, $2.50, Majestic $2.50, Penn magnetic $2.50, G. E. Frigidaire $2.50. In business over 20 years. Our name is our guarantee. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

SERVEL HERMETIC units burned or stuck completely rebuilt $22.50. Unconditionally guaranteed for 12 months. Most complete shop in Northwest. Same location for 10 years. Write for information regarding other hermetic units. Also carry parts for 14 nationally known refrigerators. Compressors for exchange. Dun & Bradstreet, 1st National Bank, references. REFRIGERATOR SERVICE CORPORATION, 1121-23 S. 7th St., Minneapolis, Minn.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER ((ASRE)), Patent Attorney, 342 Madison Avenue, New York City.

THE BUYER'S GUIDE

Copies of Air Conditioning & Refrigeration News Bound for Reference Use

Copies of Air Conditioning & Refrigeration News (formerly Electric Refrigeration News) for the past five years are available in bound books. These volumes, each covering a four-month period, are bound in a stiff paper board cover or in black imitation leather. Prices: $3.00 each for paper binding or $5.00 each for imitation leather, f.o.b. Detroit.

Vol. 8—Jan. 4 to April 26, 1933.
Vol. 9—May 3 to Aug. 30, 1933.
Vol. 10—Sept. 6 to Dec. 27, 1933.
Vol. 11—Jan. 3 to April 25, 1934.
Vol. 12—May 2 to Aug. 29, 1934.
Vol. 13—Sept. 5 to Dec. 26, 1934.
Vol. 14—Jan. 2 to April 24, 1935.
Vol. 15—May 1 to Aug. 28, 1935.
Vol. 16—Sept. 4 to Dec. 25, 1935.
Vol. 17—Jan. 1 to April 29, 1936.
Vol. 18—May 6 to Aug. 26, 1936.
Vol. 19—Sept. 2 to Dec. 31, 1936.
Vol. 20—Jan. 6 to April 28, 1937.
Vol. 21—May 5 to Aug. 25, 1937.
Vol. 22—Sept. 1 to Dec. 29, 1937.
Vol. 23—Jan. 5 to April 27, 1938.
Vol. 24—May 4 to Aug. 31, 1938.
Vol. 25—Sept. 7 to Dec. 28, 1938.

Shipment will be made by express collect unless otherwise specified.

A Handy Binder for Current Issues of the News

We offer a binder designed and made especially for keeping your current file copies of Air Conditioning & Refrigeration News neat and always available for ready reference.

The price is $3.75 shipped to you postpaid in the United States and Possessions and Pan-American Postal Union countries. For all other countries, postage based on a shipping weight of six pounds must be added to the price. Send your remittance with order.

Business News Publishing Co., 5229 Cass Ave., Detroit

Refrigerator Price Control on In N. Y.

(Concluded from Page 1, Column 5)
dealers in the metropolitan New York area the opportunity of signing price maintenance contracts under New York State's Feld-Crawford or "fair trade" act.

Similar to other "fair trade" price-maintenance agreements, and to the one put into effect by Rex Cole, Inc., the contract being offered by the Westinghouse distributor provides that the dealers shall not advertise or sell, directly or indirectly, any of the refrigerators covered by the agreement at less than the minimum resale prices then in effect for such refrigerators. These prices are to be set by the distributor at the time the contract is signed, and are subject to change by the distributor from time to time.

Trade-ins are controlled under this agreement by the stipulation that trade-in allowances shall in no cases exceed the current open market resale value of the used refrigerator in the "as is" condition.

ARBITRATE PRICE DISPUTES

If either the retailer or the distributor terminates the agreement, or if the retailer wishes to close out his stock, or if he wishes to sell certain damaged or deteriorated items below the established resale price, the retailer must first offer to re-sell any such merchandise to the distributor at a stipulated discount. Any dispute as to the price to be paid by the distributor shall, at the option of either party, be submitted to arbitration.

Circumventing the difficulty of determining the exact amount of damages to be awarded the distributor by any dealer violating the contract, the agreement provides for a flat penalty of $50 for each refrigerator sold in violation of the contract and penalty of $500 for each refrigerator advertised at a price beneath that set by the contract. In addition, the distributor is entitled to injunctive relief against any and all actual or threatened violation of the agreement.

DAMAGE CLAIMS

Disputed damage claims may, at the option of either party, be settled by arbitration in accordance with the rules of the American Arbitration Association.

Provision is made for termination of the agreement by either party for any reason upon five-day written notice.

Mt. Clemens, Mich., Dealer Handles Crosley Line

MOUNT CLEMENS, Mich.—Metro Radio & Appliance Store has been opened here by Ernest Walton and Charles Stockwell. A complete line of appliances is handled, including Crosley refrigerators.

South Dakota Dealer Moves

SIOUX FALLS, S. D.—Robson-O'Bryan Co., dealer in electrical goods, has moved from 317-A S. Phillips Ave. into larger quarters at 221 N. Phillips Ave.

G-E 'Tel-a-Frost' Tells When Freezing Unit Needs Defrosting

(Concluded from Page 1, Column 5)
series have the paneled door and black base characteristic of the 1938 G-E line. All models have the "tel-a-frost" indicator, quick trays, and center interior light.

Styling of the cabinets has been designed to maintain the refrigerator's traditional role of keystone in the modern kitchen scheme. Change is principally noticeable in the fluted door and stainless steel base grille. Piano-type hinges which assure the doors being held in alignment, a new latch handle and escutcheon, and a new nameplate impart new eye-appeal. Cabinets were designed by Ray Patten.

INTERIOR REDESIGNED

Within the cabinet, the evaporator door and vegetable and fruit baskets have been redesigned. All shelves have bar fronts, and the plastic shelf supports have been streamlined. Cabinet light has been given a new center location, with the porcelain liner recessed to form a reflector eliminating glare and the previous interference with food storage.

"Tel-a-frost" indicator, mounted on one side of the evaporator, is a simple device indicating the proper time to defrost.

All models have quick trays, with triple-purpose release. Some models have a large dessert tray with cover, and a removable evaporator shelf. Fruit baskets and vegetable pans are of the sliding type.

A "thriftometer," indicating temperature within the cabinet, in white plastic case, is located on the inner side of the cabinet door.

MEAT COMPARTMENT

In deluxe models, a metal shield has been provided to protect the top edge of the unit's compartment door; certain parts of the interior are in aluminum, and a full set of oven-proof pottery dishes is included. These models have an exterior finish of white porcelain.

Purpose of the new cold storage compartment is to provide a low-temperature, high-humidity area primarily for preserving fresh meats. Located directly under the evaporator, the compartment has an interior temperature of from 5 to 10° lower than that of the cabinet proper, it is said.

Lower temperature is designed to retard bacterial and mold growth, while the high humidity will keep meat shrinkage at a minimum. Design of a combination chiller and cold storage compartment makes for more flexibility in use, it is claimed. Entire compartment slides, but cannot be pulled far enough to be dropped.

All of the new refrigerators are powered by hermetically-sealed units with "Scotch yoke" compressors, protected in a welded steel casing. Power is introduced into the mechanism through patented indestructible glass leads, and the unit operates in a continuous bath of oil, which cools as well as lubricates.

As protection against the motor's starting under heavy load, an unloader assures that oil under pressure reaches every moving part before load to the compressor is assured. When the unit stops, load is removed before the oil ceases to flow.

A single knob controls the operation of the refrigerator. Twelve-point speed control allows a wide range of flexibility in freezing, and moderate refrigeration continues even during defrosting, it is claimed. Stainless steel evaporator is sanitary and easy to clean.

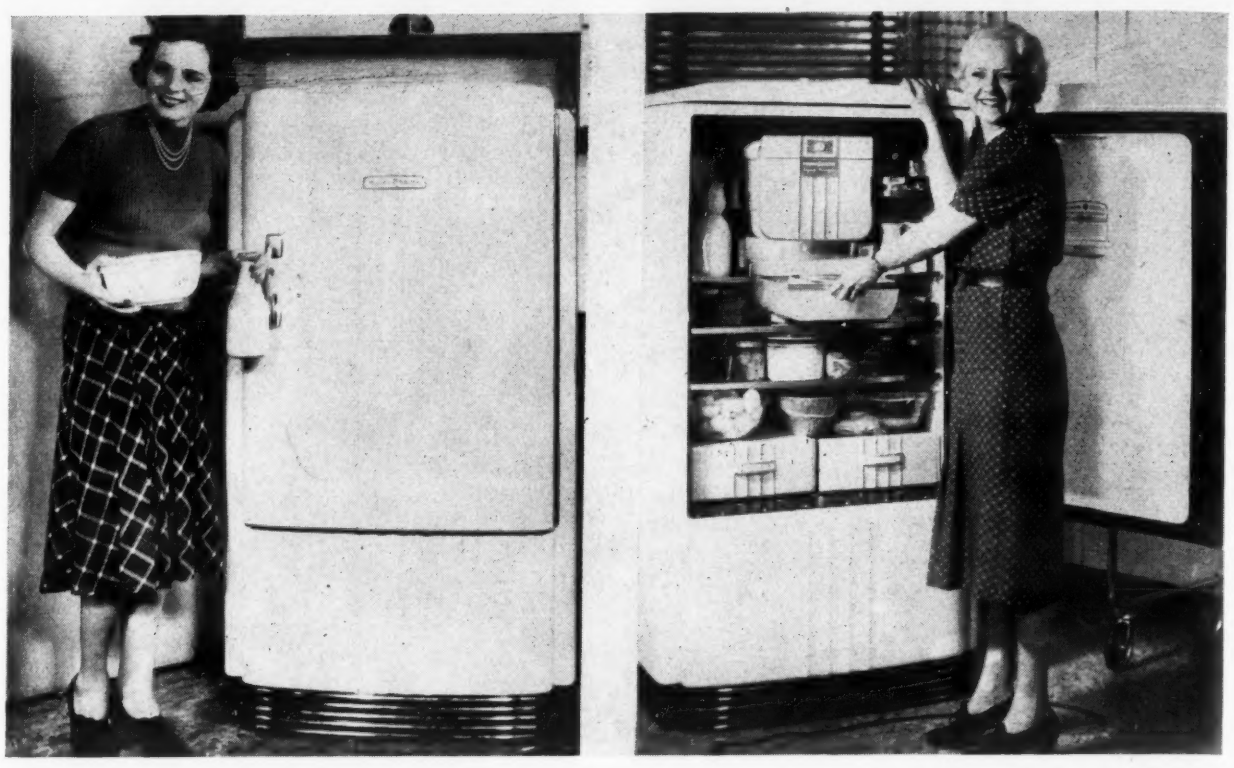
Safe-like in construction, the new cabinets consist of one-piece inner and outer shells of heavy-gauge sheet steel, with electrically welded joints. Insulation is of Thermocraft. Live rubber door-seal gasket is said to be grease-resistant, and door strips and jambs are of Textolite.

Exterior finish of standard models is of Glyptal baked enamel on Bonderized steel. Inner liner is of porcelain, and reservoir bottom is coated with porcelain.

Under the Kitchen Cupboard

G-E's apartment house refrigerator is designed to fit under the cupboard space in a crowded kitchen.

G-E's 1939 Units Are New Inside and Out



Left: New latch handle on General Electric's 1939 models opens at a touch, even when hands are full. Note fluted door and stainless steel base grille. Right: Meats are stored in this under-the-evaporator compartment.